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OF THE

MEDICAL SCIENCES.

NO. CIII. NEW SERIES.

JULY 1866.

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Corrigenda.—In the title to Dr. Leavitt's article, in our last number, the term *hyposulphite* is incorrectly printed hypersulphite. It is correctly printed in the body of the paper and in the index.

The reporter of the case of gunshot wound of the brain on page 564 of the same number, is Dr. Joseph C. Hutchinson, Prof. Surg. Long Island College Hospital.

THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR JULY 1866.

ART I.—*On Amputation at the Hip-Joint, with the Histories of the Cases in which the Operation has been performed at Philadelphia.* By THOMAS G. MORTON, M. D., one of the attending Surgeons of the Pennsylvania Hospital and to the Wills (Ophthalmic) Hospital, Philada. (With eight woodcuts.)

It is an interesting fact in the history of amputation at the hip-joint, that no less than eleven cases have occurred in Philadelphia, in which amputation at the coxo-femoral articulation has been performed; of this number, the histories of only two or perhaps three of them have been placed upon record. All operations of such magnitude, especially those of amputation at the hip-joint, should be brought before the profession, in order that from the statistics thus adduced we may be able, if possible, in future cases to arrive at the proper course of procedure.

The subject of the first of the following histories came under my care at the Pennsylvania Hospital, during the past winter. Both the patient and myself feel under obligations to Dr. Andrews, the resident surgeon, for the assiduous care and skill manifested in his attendance on the case, to which, in a great measure, is due its successful termination.

CASE IX. *Secondary re-amputation at the hip-Joint for osteo-myelitis.*—E. D. Ulmer, aged 21 years, formerly a sergeant in Company G, 37th New Jersey Volunteers, was wounded by a minie ball at the battle of Cedar Creek, Shenandoah Valley, Va., Oct. 19, 1864. The bullet entered the inner face of the left thigh, about three inches above the condyles, passing across, fractured the bone, and was found lying immediately under the skin on the outer part of the limb, whence it was readily extracted at the time. There was but little hemorrhage at the time of the injury; and an attempt was made to save the limb, as the artery was believed to be

uninjured. The usual symptoms, however, attendant upon such cases soon appeared—sloughing, deep dissecting abscesses, and the discharge of small fragments of bone. The case, nevertheless, progressed favourably until the 24th of November, thirty-six days after the receipt of the injury, when he had a violent hemorrhage. Amputation of the thigh the same day, about the middle, by the flap method, was performed by Dr. Walters, U. S. Vols.

The patient rapidly convalesced, being in the course of a few weeks able to go about on crutches. The stump, however, still continued suppurating and somewhat painful; no change occurred until the month of March, 1865, when a large piece of dead bone was felt. At this time, he was in the Hicks General Hospital, Maryland, under the care of Dr. B. B. Miles, by whom the integuments were dissected back, and the necrosed bone exposed, and three inches of it removed through what was supposed to be sound tissue. From this operation he quickly recovered, and then left for his home at Philadelphia on the 30th of May, the stump still discharging. On the journey he unfortunately fell, and struck the outer part of the stump with much force. Increased suppuration followed with occasional traces of blood in the discharge; also a great deal of deep-seated pain throughout the entire stump.

On the 22d of January, 1866, fifteen months after the original injury, while dressing the part as usual, a hemorrhage occurred from one of the fistulous openings at the end of the stump, amounting, according to his statement, to at least a pint. On account of this hemorrhage, he was admitted into the Pennsylvania Hospital.

The usual local remedies were applied to guard against its return; he was put upon a stimulating treatment, with the best diet. The stump presented the following appearances: The edges of the flaps were ulcerated, inverted, and covered with fungous granulations which were red, painful, and disposed to bleed on the slightest probing. No examination of the bone was made for fear of exciting hemorrhage. On the outside of the stump, which was swollen, sinuses were found, the mouths of each being surrounded by puffy, pale granulating tissue. The femur seemed much thickened, could be readily felt through the integument, and was very painful to pressure, but no examination of the bone was made through the fistulous tracks. The head of the femur seemed also involved, on account of the pain about the region of the socket, and his inability to allow much motion in the joint. He was greatly prostrated from the long-continued drain, and lastly from the hemorrhage.

The history of the case, and the present appearances of the stump, clearly indicated the existence of osteo-myelitis, with necrosis of the neck, and probably ulceration of the head of the bone. The recurrence of dangerous hemorrhage and the very extensive disease of the femur, obviously demanding operative treatment; the removal of the stump at the coxo-femoral articulation offered the only chance for recovery. The patient's general health improved, and there was no further hemorrhage until about the 15th of February, when the discharge again became mixed with blood.

On the 17th, in the Hospital amphitheatre, before the clinical class, the patient being etherized, an exploratory operation was made. An incision upon the outer side of the thigh revealed a diseased condition of the bone as high as the neck. Amputation was decided upon in consultation with Drs. Hunt and Agnew.

The abdominal tourniquet having been applied, antero-posterior integumentary flaps were dissected up; the femoral artery, which was exposed with some difficulty on account of the hardened and altered condition of the tissues, consequent upon the previous inflammation of the soft parts, was then tied.

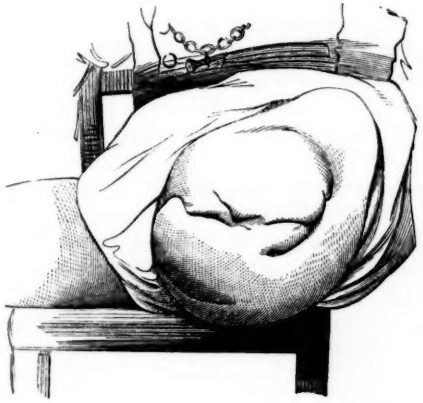
The muscles having then been cut, circularly close to the pelvis, the head of the bone was readily disarticulated. The aorta was so completely controlled by the tourniquet of Mr. Syme that no arterial jet was observed during the operation; the loss of blood being very trifling, hardly amounting to three ounces. About sixteen ligatures were applied. The flaps were approximated with adhesive plaster, no sutures being deemed necessary. The subsequent dressings consisted of lint soaked in pure laudanum, until after the parts had almost healed, when simple cerate dressing was substituted.

The patient was much prostrated by the operation, but reacted well; the discharge was profuse; and during the first week, the edges of the flaps appeared a little sloughy. Under vigorous stimulating treatment and the local application of permanganate of potash in solution, he rapidly recovered.

No other unfavourable symptoms having occurred, and the ligatures being all away by the end of the second week, two small openings in the stump alone remaining, he left the hospital March 27th, thirty-eight days after the operation for his home in the northern section of the city.

May 10. Is going about town on crutches, having gained many pounds since his discharge from the hospital. Fig. 1, engraved from a photograph

Fig. 1.



taken May 1st, seventy-two days after the operation, gives an accurate idea of the appearance of the stump.

20*th*. Left the city to fill a situation as telegraph operator in New Jersey.

Dissection of the Stump.—The portion of bone removed measured

eight inches in length. It presented a well-marked example of necrosis following osteo-myelitis. A long loose sequestrum was found, extending up into the neck of the femur, encased in new bone, Fig. 2, and projecting through the ulcerated capsular ligament. The exterior consisted of new bone of a porous nature. The head of the femur was ulcerated around the part which unites with the neck; the latter was found much altered in shape from absorption and ulceration.

Fig. 2.

The acetabulum was healthy; no ulceration of the cartilage having taken place.

It is a well-established rule that, to arrest the continued development of osteo-myelitic disease, it is necessary to amputate through a joint, since the affection invariably returns in the adjacent part when the bone has been divided in its continuity. Hence, when the shaft of the femur is involved, we must go to the hip-joint in order to get rid of the disease. In the case presented, the chances of a successful issue were greatly enhanced by the fact that the patient had become habituated to his invalid condition; the continued drain upon his system having extended through a period of sixteen months, gradually prepared his system to sustain the shock of the last operation.

In the following histories of amputations at the hip-joint, we find that all, with one exception, were for long-standing disease, or after the traumatic phenomena had entirely disappeared. Among the various cases, we find one of necrosis following coxalgia; one of extensive burn involving all the tissues from the foot to the groin, the patient being threatened with exhaustion from copious suppuration extending through a period of fifteen months; four cases of enormous tumours of long duration; four cases of disease resulting from gunshot injuries of long standing. The favourable result in a majority of these cases proves that the operation, when performed for chronic disease, or as a secondary operation, affords the most reasonable hope for a favourable result.

Amputation at the hip-joint was performed many times during the late war for gunshot wounds. Of these operations, the mortality, as might be expected, was very great. Of twenty-three cases, thus far reported in the surgical history of our recent war,[1] only two recoveries followed nine primary, and three after fourteen secondary hip-joint amputations.

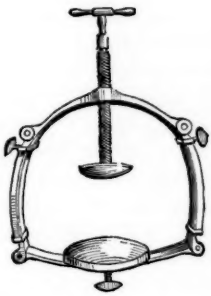
The arrest of the circulation through the extremities, by pressure applied to the abdominal aorta, may be considered a positive requirement in every case, as it guards against all possibility of danger from loss of blood at the time of operation. Erichsen remarks that "in amputation

[1] Circular No. 6, Surgeon-General's Office, Nov. 1865, p. 50.

at the hip-joint, the great danger to be apprehended is excessive hemorrhage, the incisions being made so high up that no tourniquet can be applied or pressure of the artery in the groin trusted to."[1]

The abdominal compressor, Fig. 3, an instrument of comparatively recent application, effectually controls the aorta, and thus removes this source of greatest danger. That no injurious effects arise from its use may be inferred from the fact that, in nearly every case where it has been employed, the aorta has been compressed for at least ten, and in one case for twenty-seven minutes, without any appreciable effect upon the general circulation. The instrument was used the first time in this country by Prof. Joseph Pancoast, in his first case, June, 1860. It is said to be a modification of the Italian, by Malgaigne, but resembles that of Skey, of London, as given in his Operative Surgery. Prior to its being applied the patient should be rolled upon his right side, in order that the intestines may be withdrawn as much as possible out of the way, so as to allow the pad and roller of bandage attached, an important addition to the instrument by Dr. Pancoast, to rest more directly upon the aorta.

Fig. 3.



The usual method of amputation at the coxo-femoral articulation by the flap operation, after Lisfranc, is much more rapidly accomplished, but the enormous mass of muscular tissue which remains gives a large suppurating surface, and has probably been one of the causes of the great fatality in this operation. Dr. J. M. Warren, of Boston, was one of the first to perform the operation by flap of the integuments, and a circular division of the muscles, which is so highly recommended by Mr. Skey, of London, in the first case of successful amputation at the joint in that city in 1859. The disease was osteo-sarcoma, which extended so high up that the ordinary method of transfixion was impracticable.

"And in view of the possibility of a dissection of the tumour from its attachments, a large flap of skin was raised from its front part, the incision commencing at the root of the scrotum, and terminating just above and in front of the great trochanter.

"The flap was dissected up quite to Poupart's ligament, the fascia over the artery opened, the vessel exposed, a ligature passed around it and tied. An incision was now made on the back part of the thigh corresponding with that in front, and the flap partially raised, with a short strong knife, the muscles running from the pubis to the inside of the

[1] Surgery, p. 77, 1853.

tumour were cut through, and those on the outside treated in a similar manner."[1]

The operation was then completed by disarticulating the head of the bone.

In both cases of Dr. Pancoast, the first in 1860, and the second in 1865, which terminated so successfully, this distinguished surgeon adopted skin flaps, with circular division of the muscles from choice, believing that with less muscular surface to suppurate the risks of the operation would be diminished.

To Profesors Pancoast and Gross, and also to Dr. Agnew, I am under many obligations for the full notes of their cases kindly placed at my disposal. Those of Dr. Agnew's case have been carefully and admirably drawn up by Dr. Wm. Pepper, the resident surgeon at the Pennsylvania Hospital, under whose immediate care the patient was. I have also incorporated in this paper Dr. Packard's case, the full history of which is published in Circular No. 6, Surgeon-General's Report, Nov. 1865. This case may be justly considered as belonging to Philadelphia, since the hospital, although outside of the city, at Beverly, was in reality one of the city U. S. A. hospitals, and under the immediate control of the medical director at Philadelphia.

The most recent case of hip-joint amputation in Philadelphia has just occurred at the Episcopal Hospital, on Saturday, May 5, 1866. I regret my inability to obtain any account but the barest outline of the case and operation. From this it appears to have strongly resembled that of Dr. Agnew's, both as to the nature of the wound and its results, as well as the method of operation.

The statistics of the Philadelphia cases, eleven in number, place the operation in a favourable light; for of this number seven have recovered and four died.

CASE I. *Morbus coxarius; caries of the head of the femur; amputation at the hip-joint;* by Dr. J. W. Duffee, in 1840, being the first operation at the joint in Philadelphia. The principal facts I have obtained from a "note of the delivery of a female, one of whose lower limbs had been disarticulated at the hip-joint seventeen years since, for morbus coxarius,[2] by John H. Packard, M. D." The patient was a coloured girl about six years of age, who had long suffered from disease of the hip-joint; disarticulation at the joint was effected, although the acetabulum was much diseased; she made a good recovery. Seventeen years afterwards the patient was an inmate of the Blockley Almshouse, obstetrical department; her delivery was successful. The stump was entirely healthy and presented a beautiful cicatrix.

CASE II. *Medullary sarcoma connected with the periosteum, and involving the soft parts at the inner side of the middle and upper region of the*

[1] Boston Med. and Surg. Journ., May 26th, 1859.

[2] Amer. Journ. of Med. Sci., Philadelphia, No. lxvii., July, 1857, p. 283.

thigh. Amputation at the hip-joint, at the Pennsylvania Hospital, June 13th, 1860, by Joseph Pancoast, M.D., Prof. of Anatomy in Jefferson Medical College; first instance of aortic compression with the tourniquet in this operation; Acupressure. Reported by Dr. T. B. Reed, one of the Resident Surgeons of the Hospital.—Maurice Heston, a farmer from New Jersey, aged 32, stout and muscular, weighing 168 pounds, was admitted into the Pennsylvania Hospital June 6, 1860, with a large tumour, pulpy to the feel, occupying a considerable part of the upper and middle third of the thigh, on the inner side of the limb.

The patient stated that, about eleven months before, he had been struck, while ploughing, a sharp blow on the inner side of the thigh with the handle of his plough. The bruised part was painful for a considerable time, then all unusual sensitiveness seemed to disappear. Some months after, not being able to recollect exactly when, a tumour was felt deeply seated on the inner part of the thigh. It increased rapidly in size, and soon produced a feeling of constant uneasiness and dull pain. For a time the growth seemed to be kept in check by the internal use of iodide of potassium and the external application of the tincture of iodine, which he used by the advice of his family physician. It has now attained a great size, and he is unable to move about except by the aid of crutches, and finds for the last month his appetite and sleep have been impaired.

Two months prior to his admission Dr. Pancoast examined the tumour, and introduced a canulated trocar, so contrived as to withdraw a small portion of it for the purpose of microscopical examination, which made more manifest the bad character of the tumour. He was put under the use of quinia and iron internally, with cold sedative lotions to the limb.

June 13. Present, the surgical staff of the hospital, many physicians and surgeons of the city, the clinical class, and the physicians of the Japanese embassy, which were then visiting us.

The patient, fully apprised of the serious character of the operation, the risk of life attending it, and the chance of a return of the disease, prepared himself with great coolness and fortitude for it.

To avoid the loss of blood which usually follows in hip-joint operations, from the gluteal, ischiatic, and other arteries which cannot be directly compressed, Dr. Pancoast proposed to make compression on the aortic trunk near its termination, a little above and to the left of the umbilicus, with a large tourniquet made to embrace the body, on the Italian principle. As this instrumental compression of the aorta had not, it was believed, been previously used in disarticulation of the hip-joint, and probably for no other cause long kept up while the patient was under the influence of an anæsthetic, it became a question whether so firm a pressure on the abdominal muscles as would be necessary, would interfere with respiration during the anæsthetic sleep. This question was duly decided in favour of the use of the tourniquet by an experimental trial a few days before the operation.

The tumour had extended so far up the bone as to make the hip-joint the only practicable point of operation, if any other indeed had been justifiable, and with the necessity even then of getting part of the skin flap from over the front face of the tumour. From the great size of the hip, Dr. Pancoast believed the chance of the patient's recovery would be almost in inverse proportion to the bulk of muscles left covering the joint and the amount of blood lost. With this object in view the operation was done as follows:—

The abdominal tourniquet having been previously adjusted, the patient was put thoroughly under the influence of sulphuric ether by inhalation. The pad of the tourniquet, with a roller bandage strapped beneath it, was now forced down with a screw upon the aorta a little above and to the left of the umbilicus, which perfectly interrupted the circulation down both limbs. The patient was rolled a little on the opposite hip and the diseased limb well adducted so as to bring the trochanter major forwards and make the joint more accessible. A stout strong scalpel, double edged at the point, was entered above the trochanter and pushed along the neck of the bone into the joint. The knife was then brought down over the trochanter and for three inches below it, cutting to the bone, the limb at the time being slightly adducted by the assistant. It was then carried over the front of the thigh, making an incision slightly convex downwards (cutting down to the muscles merely) to a point on the inner side of the thigh, corresponding to a line drawn transversely round the limb an inch and a quarter below the level of the lower part of the ischium. The knife was then carried, cutting in like manner down to the muscles, along this posterior transverse line, and then along the outer part of the thigh to the point of commencement, cutting again to the bone as the knife came up below the trochanter. A cutaneous flap, nearly two inches broad, comprising within it nearly all the parts down to the face of the muscles, was then dissected up around the front, inner, and back part of the limb, and reverted. On the back part of the limb the reverted flap was fully two inches lower. At the base of this fold the knife was carried down to the bone on the front of the limb. By a little dissection the surface of the joint was now exposed. From the point where the knife entered the joint at the first step of the operation, the capsule was divided on its front and inner face. The limb was then strongly adducted so as to allow of the cutting of the round interarticular ligament near the head of the bone, and thus make more easy the securing of the branches of the obturator artery which accompany it. The head of the bone was now dislocated forwards and a large catlin passed behind it to cut the remains of the capsule and the surrounding mass of muscles as short as possible, coming out at the base of the reverted flap behind.

There were no arterial jets, and but little blood was lost, including that from the severed limb, and a little reflux from the femoral vein which was immediately arrested by an acupressure needle passed after the ingenious method devised by Sir J. Y. Simpson, of Edinburgh. Another acupressure needle was placed likewise upon the femoral artery, the current of which it effectually controlled. Some ten ligatures were applied upon the profunda and some smaller arteries.

The patient bore the operation well, the respiration and the pulse not being in any unusual degree interfered with. The tourniquet was now loosened and the patient allowed to come from under the influence of the ether. The operation and ligation were rapidly done, so that the patient was but a few minutes under the full pressure of the tourniquet.

An hour afterwards the thick skin flaps were brought together by eight leaden sutures, and thoroughly pressed down and supported by very long broad strips of adhesive plaster, passed in various directions, so as to make the firmest closure of the large wound.

Previously, as a measure of additional security, a ligature was placed on the mouth of the femoral, leaving the needle compressing it in place. The stump was then covered by a large piece of patent lint soaked in

pure laudanum, half a grain of morphia was administered, and repeated at 6 and 10 P.M. and 2 A.M.

14*th*. Had a good night; pulse 96. Ordered milk-punch for breakfast with a soft boiled egg; half a grain of morphia in solution at 10 A.M.; chicken soup for dinner; mineral water to drink. Laudanum continued to the stump.

15*th*. Had a good night; pulse 100; skin very pleasant. Half grain of morphia given in beef-tea at 10 A.M.; some tympanites; an enema of ʒij of turpentine to a pint and a half of warm soap and water, which moved the bowels freely and relieved the tympanites. P.M. pulse 130; some heat of skin. Neutral mixture ordered every two hours; pulse fell to 120.

16*th*. Not so good a night; troubled with flatulence. Two drachms castor oil given and hot whiskey fomentations to belly. Half a grain of morphia at 10; appetite not so good; ordered a wineglass of milk-punch at 6 and 8 o'clock. Bowels not yet moved, ordered an enema of turpentine, which brought away a full evacuation, and afforded great relief.

17*th*. Passed a good night, less tympanites; appetite not good. Ordered wineglass of milk-punch and beef essence every six hours; stomach irritable, and complains of indigestion; lime-water given, mineral water omitted, as it was thought to increase the stomach trouble. Half a grain of morphia at 10 A.M. and 3 P.M. Continued laudanum to the stump.

18*th*. Had a good night; bowels twice moved; during the night pulse feeble; stimulants and beef essence every four hours; eat but little breakfast. All the dressings were removed; two of the alternate sutures were removed, and much of the wound had united by first intention; some little discharge where the ligatures came out; the strips were reapplied and also the laudanum dressing. 10 P.M. bowels opened twice; ordered a mixture of chalk and tannin; one-quarter grain of morphia at 10 P.M. Eats but little; takes a grain of quinia every four hours with ten drops of tincture of iron, alternate 4 P.M., patient vomited; a mustard plaster put on belly and lime-water given; took no supper; at 7 and 10 P.M. and 3 A.M. half a grain of morphia was given. Pulse at 8 P.M. 120, and feeble. 10 P.M. bowels moved; took a cup of black tea.

19*th*. 8 A.M. patient better; bowels not distended; pulse 100; skin pleasant; stimulants and beef-tea as before every four hours; stomach still somewhat irritable; a cloth soaked in paregoric and covered with oiled silk placed on belly. One-third of a grain of morphia at 10 A.M. and 3 P.M.; stump dressed as usual with pure laudanum. 7 P.M. doing well; pulse 103; skin soft; appetite better.

20*th*. 8 A.M., good night; injection of turpentine and warm soap and water given. 12 M. complains of stiffness of the jaw, as if he had taken cold; part was rubbed with a mixture of chloroform and aconite. 7 P.M. doing well; pulse 110, and full; skin comfortable; complains of starts in the stump which run up through his body, when he falls into a doze and has disturbed dreams; ordered Hoffmann's anodyne.

21*st*. 8 A.M., tolerably comfortable night; appetite improved; the two acupressure needles, one upon the femoral, the other upon the profunda, were removed; some slight hemorrhage on the withdrawal of the femoral pin; one ligature from the outside of the stump removed; dressed as usual. 9 P.M., patient lost about one and a half ounces of blood arterial in appearance; the dressings were removed and the bleed-

ing at once ceased; it was found to proceed from a point about midway in the line of the flap and away from any of the ligatures or sutures; a pledget of lint was introduced into the opening, and a thick compress of the same tightly strapped ever the point and the dressings replaced.

22*d*. No change; two ounces of sanious pus discharged; patient comfortable.

24*th*. Patient improving; partaking of mutton chops and potatoes; quite a large discharge of sanious pus from the point of hemorrhage, at least six or eight ounces of matter sponged away.

25*th*. Two ligatures came away; amount of pus diminished; patient's general health improving; an opening injection ordered.

26*th*. Two ligatures came away to-day; bowels fully moved by yesterday's enema; progressing admirably; only a teaspoonful of morphia solution at bedtime.

27*th*. Continues improving rapidly.

July 1. No appetite; tongue furred; ordered two blue pills.

2*d*. Much improved; bowels freely opened during the night.

7*th*. The ligature from the profunda came off. There has been but little discharge for some days past, and the wound is gradually closing; the pulse has not varied twenty beats either way for the past ten days.

11*th*. The femoral ligature came away to-day, and the patient was allowed to sit up; there are yet two small ligatures to come away.

The patient after this continued so steadily to improve that he was able to leave the hospital, July 24th sound and well to all appearances, 48 days from the time of his admission and 41 days after the operation. From the very day of the operation the patient had been able to take his food well, and had but one bad night, which was believed to arise from flatulence dependent upon the free use of carbonated water.

Fig. 4.

The patient returned to his farm, and for eighteen months was actively engaged in its labours, capable on his crutches of doing a full day's labour at husking corn in the open field.

After this time tumours, which showed themselves first in the iliac and lumbar glands, gradually extended till the whole margin of the stump ultimately became involved in a return of the affection. His death took place about two years after the operation from the growth of the malignant tumours in the groin. No post-mortem examination was made. Fig. 4 represents the dried tumour shrunken at least one-half in drying; it is attached to and appeared to have its origin from the periosteum. In its growth towards the skin it had enveloped the muscles on the under side of the limb and the intermuscular planes of connective tissue. Prior to the operation there was no enlargement of the lymphatic glands perceptible. The tumour was marked encephaloid.

CASE III. *Extensive suppuration from a burn involving all the integument from the foot to the groin; amputation at hip-joint, with clinical*

remarks, by Professor Gross, Jan. 29th, 1862.—This was the case of a girl under 12 years of age, who one year ago had both inferior extremities badly scalded, and in whom the ulceration of the cicatrices had produced an exceedingly loathsome and offensive discharge. An attempt to heal the ulcers had failed. The left thigh is drawn up by the contraction of the muscles; the leg is flexed upon the thigh, and almost the entire surface of the limb is covered with scabs and ulcerations, emitting the most offensive odour, infecting the atmosphere which the child is compelled to breathe. She is pale, anæmic, and greatly emaciated; suffers much from pain, for which it becomes necessary to give anodynes. Her appetite is good. To keep up her strength under the enormous drain upon her exhausted system, she takes the most nourishing food and about six ounces of brandy, during the twenty-four hours. The case is a most unpromising one for an operation. The shock may be too great for the enfeebled system, and she may succumb under it; there may be considerable loss of blood; suppuration must follow; erysipelas may supervene; pyæmia may result. All these accidents are to be kept in mind, and to be guarded against. Notwithstanding the untoward circumstances of the case, the operation is decided upon as affording the only, and a scarcely possible chance of saving the life of the little patient.

In the only two operations for amputation of the hip-joint performed in this city, both were recoveries. The statistics of amputation at this joint show that when performed for injuries, the operation is generally fatal, but, on the other hand, successful when for the cure of disease.

The patient was placed under the influence of chloroform; compression was made upon the abdominal aorta by Dr. Agnew, and upon the femoral artery, by Dr. Levis. The hemorrhage was thus controlled, and the operation performed with the loss of very little blood. The arteries were carefully tied, and the stump dressed in the ordinary manner.

A portion of the stump healed by first intention, moderate suppuration took place in the remainder, and the healing process went on without any untoward symptom. The patient's appetite was good; tonics and stimulants were freely administered *pro re nata*, and at this date, Feb. 15, 1862, the case is progressing finely and rapidly to a successful termination. (*Med. and Surg. Reporter*, vol. vii. 476.)

June 15, 1864, at the Jefferson College the case was shown by Prof. Gross, who remarked that "the wound had healed kindly and in great part by first intention; the ligature came away without trouble, though one remained on for four months. After the operation the patient immediately began to improve, gaining flesh rapidly. She took nine ounces of whiskey daily for two months. She now looks quite well, walking with the aid of crutches; unfortunately however, she is suffering from valvular disease of the heart, and hypertrophy of the left ventricle."

CASE IV. *Extensive lacerated wound (railroad accident), involving right thigh as far as the groin; amputation at the hip-joint*, by Dr. A. Hewson, one of the attending Surgeons of the Pennsylvania Hospital, Philadelphia, April 20, 1864.—The patient, a boy æt. 12, was run over by one of the city railways, and was admitted into the Pennsylvania Hospital, April 20, 1864. He was very much prostrated from the shock and loss of blood. The injury consisted in very great comminution of the femur and very extensive laceration of the soft parts as high as the great trochanter. The day following reaction having sufficiently taken place,

the limb was removed at the joint; ligatures were applied to the vessels. Although very little blood was lost, he died of renewed shock within twenty-four hours of the operation.

CASE V. *Huge osteo-chondromatous tumour of the right thigh, following rupture of an ununited fracture of the os femoris; amputation at the hip-joint*, by Professor J. Pancoast, 1865. Reported by S. Frank Potts, M.D., one of the clinical assistants in the Hospital of the Jefferson College.—Mrs. Jennie Kiernan, a stout Irish woman, thirty years old, a resident of Bethlehem, Pennsylvania, in July, 1857, had her right thigh-bone broken, three inches above the knee-joint, by the falling of a barrel of flour upon her out of a cart. No bony union followed the treatment, whatever it was, of this fracture. The false joint that resulted was not, however, a very movable one. In the December following, while going about on her crutches with her limb in this state, and only supported by a roller bandage, she fell, causing a rupture of such adhesions as had taken place between the ends of the broken bone. Being near her full term of pregnancy, she was, the day following this injury, delivered of a living child, which she afterwards nursed at the breast. In consequence of this state of things, it was thought best by the physician, who had her in charge, not to apply any fracture apparatus, till nine days afterwards, when the limb was found very painful and much swollen.

The apparatus then applied was of the most inefficient kind—simply binder's boards, without any attempt at extension or counter-extension. An entire year passed before she could sustain the weight of the body on the limb, when it was found shortened two and a half inches, but apparently firm at the fracture.

In June, 1859, a small tumour was first noticed at the outer side of the limb, at the point of fracture. It was elastic, adherent to the bone, and about the size of an ordinary marble. This tumour steadily increased in size, extending itself at first forwards, upwards, and inwards. In the course of two years, it had encased the shaft of the bone, from just above the knee-joint up to the great trochanter, the bony growth interfering with the motions of the knee-joint. After that time it increased rapidly in bulk, till the time she first presented herself to Dr. Pancoast, February, 1865, seven years and eight months after the reception of the first injury.

The thigh then measured twenty-three and three-quarter inches in circumference at its largest part, the tumour extending from four inches below the knee-joint, to the great trochanter, the bones of the leg, being unaffected. The tumour during its growth was a constant source of pain, of a throbbing character, which the patient compared to a dull tooth-ache, always aggravated in damp and cloudy days, and especially so during the periods of nursing her children, of which she had borne and nursed four since her first accident. She was still stout and lusty, and her general health seemed unimpaired, though she moved about on crutches with difficulty.

Feb. 15, 1865. The limb was amputated in the amphitheatre of Jefferson Medical College, by Prof. Pancoast, assisted by Prof. Gross, and the College hospital staff, in the presence of the class and many of the physicians and surgeons of the city. Ether alone was relied on as an anæsthetic, as in the case of Maurice Heston. The limb was very carefully drained of its blood by elevation and manipulation, and compression then made upon the abdominal aorta with the tourniquet used in the preceding

case. The operation was also performed precisely after the same method, which it is not necessary to repeat. It may be well, however, to state that the muscles about the joint were smaller, and were cut nearer their origin than in the preceding case, so as to leave but little more than skin flaps covering the wound.

The patient bore the operation well, though there was a little flagging of the respiration towards the close, which was relieved almost at once by the slackening of the tourniquet. Extremely little blood was lost; it was estimated by bystanders at not more than three ounces. The stump was dressed as in the former case, with masses of lint soaked in laudanum and covered with oiled silk. On her removal from the amphitheatre into the college hospital, she was given a half grain of sulphate of morphia in solution. She soon fell into a quiet, easy breathing sleep. Some sickness of the stomach occurred in the course of the following day, the consequence probably of the etherization, which was relieved with lime-water and milk. She had a good night's rest. The pulse a little feeble but regular as in health. The succeeding day, February 16, passed comfortably, sleeping a good deal and taking nourishment with a relish. No more morphia, or other anodyne was given internally, Dr. P. relying upon the profuse use of laudanum over the stump. During the night of the 16th she was at times restless, and a little delirious. But on the succeeding morning was quite cheerful, and when asked how she felt answered "bully," and said she believed the good priest had done his extreme unction for nothing.

On the morning of the third day, the 17th, the first and only sinister symptom appeared. This was a faint erysipelatous blush with some tenderness on the right arm, the skin having much the aspect seen at the commencement of a pyæmic affection of a joint. Dr. P. considered this to be most likely owing to reflex irritation from the stump, which he thinks at times the cause of articular pyæmic affections. He directed therefore a freer use of laudanum to the stump, and as a measure of precaution to rub the limb with oxide of zinc cerate, and to give every four hours twenty drops of the tinct. of the sesquichloride of iron. In two days after this the redness and soreness had entirely disappeared. Subsequently there was not an unpleasant symptom. The patient's eye was always bright, and her tongue kept remarkably clean. She refused stimulants in every form even that of milk punch or egg nog. She took beef essence and beef-tea from the commencement, and exhibited a marked preference for roast beef and Irish potatoes, with which she was indulged. The suppurative discharge from the stump was small in amount, and mostly came away spontaneously on the lint dressing. At the end of two weeks the greater part of the wound had healed. The long straps of adhesive plaster, with which the wound was closed, held their place so well as to require but little reapplication. The common interrupted silk sutures, with which the edges of the flaps were brought together, held their place well. From this time forward the case went on so well as to leave nothing to narrate. The use of laudanum to the stump was now suspended, and dressing made with compound elemi ointment on lint, supported with adhesive straps, substituted.

The amount of laudanum used on the face of the stump was probably unnecessarily large. About a gallon was employed in this way, certainly with results very gratifying. It alleviated the local pain, and allayed

the irritability of the system. If at any time she became restless and uneasy, a fresh application of it on the face of the stump and she would invariably in a little while fall into a gentle and quiet sleep. During the whole period of treatment, she could not be said to have lost a single night's rest or one meal's victuals.

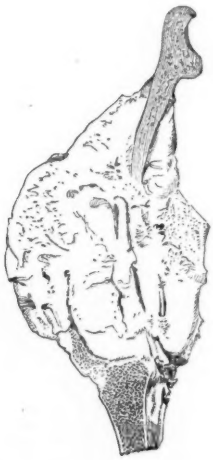
A short time afterwards she returned to Bethlehem, with the stump perfectly healed, and to all appearance freed from disease. By a letter from Dr. F. A. Martin, of Bethlehem, dated May 9, 1866, we learn that Mrs. Kiernan has had no return of the affection, and is in the enjoyment of good health.

The wood-cut, Fig. 1, representing the appearance of the stump in Dr. Morton's case, is precisely like the one taken from the stump of Mrs. Kiernan, and may be considered a representative picture of all the stumps after amputation at the hip-joint made after the process of Prof. Pancoast.

The annexed cuts, Figs. 5 and 6, taken from a photograph, show well

Fig. 5.

Fig. 6.



the enormous size the tumour had attained—the skin and tissues adjacent to the tumour having been dissected off. It extended from the trochanter to the condyles. Fig. 5 represents an external view. Fig. 6 a section of the tumour.[1]

[1] In Virchow's *Die Krankhaften Geschwülste*, vol. i., we find an illustration of this form of tumour, which in every respect resembles the section of the tumour removed by Prof. Pancoast, there defined as osteoid-chondrom. Virchow reports that the disease is usually found in the long, hollow bones, and generally at their extremities. The most common place for the growth is the articulating portion of the femur and tibia. The deposit usually occurs rapidly; upon the sawed surface great numbers of points of ossific deposit are found; near the surface distinct unconnected masses; while towards the base of the tumour they approach each other and are found continuous with the old bone. In the early stage of the disease, before calcareous deposit shows itself, the tumour is readily cut with the knife.

CASE VI. *Encephaloid disease involving the right thigh, four years' duration; amputation at the hip-joint*, by Professor Gross, at the Jefferson College, Philadelphia, October 14, 1865.—The following clinical remarks, together with notes of the case, have been furnished by Dr. F. F. Maury, Philadelphia.

Patrick Gillfoil, aged 54, a laborer, presents a tumour involving almost the entire circumference of the right thigh; measuring nineteen inches in its long diameter, and thirty-three at the greatest circumference; and extending to within two and a half inches of the groin, and below into the popliteal space.

It made its appearance four years ago, is lobulated, has a springy feel, and the subcutaneous veins are much enlarged. There is no pain or discoloration in the tumour, and, what is remarkable, it shows no tendency to ulcerate. The man's general health is good. The great bulk and weight of the growth cause lameness after exercise. What is the nature of this tumour? It is too soft to be enchondroma, which is a cartilaginous tumour, not solid enough to be fibroid, nor would a tumour of this class have attained such a magnitude in so short a time. Neither would a fatty tumour have grown so large; besides, it is more elastic, and seldom found in this locality.

From long experience, I soon, with very little doubt, took it to be encephaloid, and my reasons for this conclusion were its great size, its lobulated appearance, semi-elastic feel, and the marked enlargement of the subcutaneous veins. This last symptom is almost pathognomonic, occurring, with the exception of this class, only in connection with ovarian tumours. The disease most frequently makes its appearance in the mamma, eye, testicle, uterus, liver, lymphatic ganglions, peritoneum, and bones.

A portion of the substance of the tumour was examined by Dr. Da Costa, whose examination fully confirmed my diagnosis, having revealed the presence of cancer cells, with an unusual quantity of fibrous stroma. The older the tumour the more brain like it becomes, containing a greater number of fully developed cancer cells. It varies in consistency and chemical composition in different parts at the same time. The disease is always malignant and unforgiving in its tendency. After an indefinite period, softening occurs, and ulceration, with undermined, irregular edges; the tumour becomes a bleeding fungus, and will eventually destroy life either by hemorrhage or irritation. This tumour is entirely too large and vascular for excision, and the probability of the femoral artery being imbedded in its substance, renders all interference of no avail, except the operation of amputation at the hip-joint. This operation may be of benefit, but the disease may return in the stump, cicatrix, lymphatic ganglions, or internal organs. The primary operations have almost always proved fatal, and a previous course of suffering seems to insure the best results.

The great risk to be incurred is due to erysipelas, suppuration, and pyæmia. Danger from tetanus is so remote as hardly to admit of its being taken into account. The prevention of hemorrhage is a matter of paramount importance, thereby lessening the danger from shock, and the liability of the occurrence of pyæmia and erysipelas. To this end the limb is elevated, and, by manipulation and firm bandaging, divested as much as practicable of its blood.

The arterial circulation is controlled by means of an abdominal tourniquet, the compress of which is placed a little to the right of, and below the umbilicus. In this instance, the tumour has extended so far towards

the groin as to necessitate a deviation from the general rule as to the formation of flaps. This deviation consists in cutting from without inwards, thereby securing a sufficiency of skin of which both flaps chiefly will consist.

The patient was put under the influence of chloroform, and the operation performed by making integumentary flaps and a circular division of the muscles. The operation was essentially the same as that of Dr. Pancoast's. The hemorrhage was slight; seven ligatures were applied. The flaps were brought together by means of acupressure needles, adhesive plaster also applied, and a compress and bandage placed over the stump.

Oct. 18. The day after the operation, there was considerable gastric irritation with vomiting, a hot skin, dry tongue, and great thirst. Twenty grains of calomel were given, and a sinapism to the epigastrium. At present, pulse ninety-six, tongue coated, skin and appetite good, and rests well; wound seems uniting by first intention; there is a sero-sanguinolent discharge, which is absorbed by a sponge moistened with a solution of permanganate of potash.

25*th.* Progressing favourably; the amount of pus discharged does not amount to a tablespoonful; is cheerful and hopeful.

Nov. 4. Stump almost united; no pain in the part; the femoral ligature came away yesterday, the twentieth day after the operation.

16*th.* Left for his home one hundred miles from the city; stump almost well.

Dec. 23. A letter received from the physician who is attending Patrick, reports, that until recently, his recovery has been rather slow; stump nearly well.

CASE VII. *Enormous enchondroma, involving the right thigh at the lower part; amputation at the hip-joint,* by Dr. A. Hewson, one of the attending Surgeons of the Pennsylvania Hospital, 1865.—Martha Jane Reed, from Wilmington, Delaware, aged 28, was admitted into the Pennsylvania Hospital, July 24, 1865, for an enormous enchondromatous tumour, involving the right thigh at the middle and lower part. The disease had been growing for several years, and had lately become ulcerated. The patient was put under the influence of ether, and assisted by the surgical staff of the hospital and before the clinical class; disarticulation was effected on July 26; the double flap operation by transfixion, was performed; the acupressure needles were applied after considerable loss of blood, to all the vessels. Dry dressings were applied to the stump. The patient never reacted, and died fifteen hours after the operation.

CASE VIII. *Secondary re-amputation at the hip-joint for osteo-myelitis,* by J. H. Packard, M. D., 1865; *recovery.*—"Private Eben. E. Smith, Co. A, Eleventh Maine Vols., aged 19 years, was wounded at the engagement at Deep Bottom, near Drury's Bluff, Virginia, on August 16, 1864, by a musket ball, which fractured the head of the right tibia. He was admitted at the U. S. General Hospital, at Beverly, on August 22d, 1864. On admission, the injured knee-joint was swollen and painful, and there was irritative fever of a moderate grade. On September 12th, secondary hemorrhage occurred, and the thigh was amputated by circular incisions at the lower third, by Acting Assistant Surgeon T. M. Morton, U. S. A., the patient being under chloroform. The case progressed fa-

vourably until October 17th, when secondary hemorrhage recurred, and was arrested by ligating the femoral artery in Scarpa's triangle. The stump remained swollen and painful, and furnished a profuse fetid suppuration. Osteo-myelitis supervened; the end of the femur protruded and was removed by the chain-saw. Necrosis finally extended as high as the trochanters and numerous abscesses formed. On January 19th, 1865, amputation at the hip-joint was performed under chloroform, by Acting Assistant Surgeon, J. H. Packard, U. S. A., the antero-posterior flap operation being adopted. On January 27th, there was hemorrhage from the stump, and the external iliac artery was tied. The ligature separated on February 17th, and two days afterwards there was profuse bleeding from the divided artery, which was controlled by pressure, for fourteen days. After this, the patient rapidly improved. On April 12th, 1865, Smith was transferred to White Hall Hospital, near Bristol, Pennsylvania. May 27th, 1865, he was discharged from service quite well and strong, the wounds being entirely healed."[1]

CASE X. *Compound comminuted fracture of right femur, from wound by minie ball; amputation at hip-joint after thirty-four months*, by Dr. D. H. Agnew; *death from secondary hemorrhage on the twelfth day.*—James McGeehen, aged 48, a native of Pennsylvania, and always in the enjoyment of excellent health, was wounded at the battle of Gettysburg, July 1, 1863. The wound was inflicted by a minie ball which entered the inner surface of right thigh in its middle third, traversing the entire thickness of the thigh and producing greatcomminution of the shaft of the bone. There was considerable hemorrhage at the time, although none of the larger vessels or nerves seem to have been divided. He lay upon the field for five hours, and was then removed to the hospital, where he remained in bed for fifteen weeks. A slough about one and a half inches in diameter formed around wound of entrance, and a profuse discharge continued during this period. His general health, however, kept up admirably. At the end of fifteen weeks, he left his bed for the first time, the limb being very greatly thickened, and already a tendency to form fistulous openings showing itself. Soon after one of these fistules opened, discharging a fragment of bone about one inch in length and not thicker than a crow's quill. Since that time the morbid action in the limb has steadily progressed; the original wound has long since closed; but a free discharge, averaging a gill daily for the past two years, has been kept up from numerous fistulous openings, which have successively formed. There have also been discharged, at various times, not less than fifty small scales and nodules of necrosed bone. The thigh has remained much enlarged, and has steadily been growing harder, heavier, and less manageable. During this time he has been in the habit of drinking a moderate amount of liquor, though never to excess.

At the date of his admission into the Pennsylvania Hospital, April 9, 1866, his condition was good; he was in excellent spirits, brave and hopeful. Careful examination revealed no serious organic disease of any viscus, though the feeble impulse of the heart, and the rather weak, occasionally intermitting pulse, indicated a probably fatty and weak heart. The lungs were free from organic disease, but he had been suffering for some days from a slight attack of bronchitis. He did not suffer much

[1] Circular No. 6, Surgeon General's Office, 1865, Washington, p. 49.

acute pain, but the weight of the leg and its deformity almost prevented locomotion, whilst his health was beginning to succumb to the continuous drain. The right thigh was very much enlarged, hard and resisting, and riddled with fistulous tracks up to about one and a half inches from greater trochanter of femur, above which it seemed probable that the bone was healthy. After careful consultation, it was determined to remove the limb at the hip-joint, upon Saturday, April 21. The patient was placed upon tonic treatment with nourishing diet; his bowels were also carefully regulated. He complained of nothing, excepting his cough, which, however, gave him very little trouble.

Upon the appointed day Dr. Agnew removed the limb, in the presence of the class, at the Pennsylvania Hospital, assisted by his colleagues, Drs. Hunt and Morton, and the residents of the house. The abdominal tourniquet was employed, and by its means the circulation of the abdominal aorta was completely controlled. The method of amputation employed was the same as in the case of Dr. Morton's, by antero-posterior oval skin flaps, with a short circular flap of the muscles. The femoral artery was ligated, after the anterior flap was dissected up, the femoral vein not being ligated at all. The vessels were all secured by ligatures, twenty-one being required. The time consumed in the entire operation, including the ligature of the femoral and the disarticulation of the head of the femur, was one and a half minute. The time during which the abdominal tourniquet remained tightened was twenty-seven minutes. It may safely be said that the hemorrhage during the entire operation did not exceed f℥iij; not f℥ss of which was arterial blood. Ether alone was employed in inducing anæsthesia, and about f℥iij sufficed, as he inhaled it without effort, and soon came under its influence. The stump was packed with lint. The leg, when drained entirely of blood, weighed 22 pounds, the entire weight of the body at the time being about 145 pounds. Immediately after his removal to the ward, an enema of tr. opii f℥j was administered; and this was repeated at 8 P. M., when stump was closed by lead suture, and dressed with cerate.

22*d*. He has entirely reacted from the very slight amount of shock following the operation. Pulse, which under agitation from the approaching operation had been averaging from 100 to 115, has fallen to 96; respirations, 20; skin sweating and pleasantly warm; no stimulus; moderate diet. R. Tr. opii f℥j, t. d., by enema.

23*d*. Perfectly comfortable. Has passed a quiet night; has a good appetite. A considerable part of stump has united by first intention, and there is only a little greasy, watery discharge from the inner angle. Dry dressing continued.

24*th*. Doing excellently. Discharge thin and small, but flaps are rapidly uniting. R. Whiskey f℥iv daily, and Basham's Mixt. f℥ss t. d. Dry dressing continued.

25*th*. Has not an unpleasant symptom, save a rather frequent bronchitic cough. The flaps around entire front of stump are united; the discharge comes from the angles, and is evidently due to the breaking down of the subcutaneous fat; laudanum enemata now given twice daily; warm water dressing substituted.

26*th*. Eats and sleeps well; troubled by his cough, which is quite severe, accompanied by tenacious mucous sputa; laudanum enemata suspended, and sol. morph. sulph. f℥ij to f℥ss given each night; during the day a sedative expectorant mixture every three hours. The stimulus has not been increased.

27*th* and 28*th*. Steadily improving; cough less troublesome; discharge becoming more purulent, and increasing in quantity; warm water dressing still applied.

29*th*. Progressing admirably; discharge continues purulent and quite abundant, amounting probably to f℥iij or f℥iv daily.

30*th*. Much the same, excepting that cough is again more troublesome. The union of the flaps is daily becoming more secure, and the discharge now consists of laudable pus; four ligatures came away.

May 1. Seems brighter and better than any day heretofore; eats heartily; stump looks perfectly healthy; discharge moderate; two more ligatures came away.

2*d*. Doing excellently; the stump is rapidly consolidating, the skin remaining as soft and healthy as on day of operation. Most of the stitches have been cut away, the union being sufficiently firm around anterior part of stump. The pulsation of the external iliac artery, which for several days was very marked, has diminished greatly, and seems as though propagated through a firm clot. He has been troubled considerably with cough for past two days.

8 A. M., pulse 105, resp. 22; 8 P. M., pulse 100, resp. 24. At 12 o'clock, midnight, in the absence of the night watch, hemorrhage occurred, and on his return the patient was found dead.

Upon removing the dressing, it was seen that a secondary hemorrhage had taken place. Most of the blood was retained either in stump or inside the dressing; the little that had escaped had flowed from inner angle of stump, back under the body. The stump was immediately torn open, and the hemorrhage found to have proceeded from the femoral vessel. The most powerful restorative measures were employed for a long time, but without producing the slightest effect.

Upon dissecting the stump the union was found to be complete over one-half of the entire surface of the flaps, whilst the deeper portions of the stump were covered with healthy granulations. The femoral vein, which was not ligated, was entirely occluded; the femoral artery was patulous, its inner coat projecting somewhat beyond the other two; the inner coat of artery was deeply stained and roughened for at least 1¼ inch above the extremity; higher up it appeared perfectly healthy; the ligature which had secured the vessel was still attached to a shred of the outer fibrous coat. It had evidently very recently cut its way through, and still retained in its loop the end of the vessel which had sloughed off. Lying immediately in front of the femoral vessels, imbedded in a recent clot, was found the plug which had been driven out of the artery. This was a firm, flesh-coloured clot, of the calibre of the vessel, and long enough to reach up to the origin of the deep epigastric and circumflex iliac arteries.

No positive testimony could be obtained that the patient had one of his violent spells of coughing immediately before the accident, as all in the ward were asleep, excepting the watchmen; but all the appearances render it highly probable that directly after the ligature of the femoral became detached the violent succussion of the diaphragm incident to a paroxysm of coughing had expelled the clot from that vessel. All the other vessels appeared completely obliterated. None but the thoracic and abdominal cavities were examined. The lungs were large, and free from pleuritic adhesions. They were somewhat emphysematous, and

showed large amount of pigment over surface. The anterior portions were anæmic, but posteriorly there was marked congestion of lower lobes. The heart was quite flabby, and moderately dilated. There was no valvular disease or apparent insufficiency, but microscopic examination showed advanced fatty degeneration of the muscular fibres. The liver was also very soft and fatty. Kidneys anæmic and pale. Other viscera healthy. The large vessels and heart contained very little blood. There was a small collection of unhealthy purulent matter in manubrium of the sternum. The limb, upon dissection, showed very great disease of all the soft parts between the trochanters of the femur and the knee-joint. The muscles had undergone fatty degeneration; their sheaths were very much hypertrophied, and of almost cartilaginous density.

Fig. 8. Fig. 7.

Toward the bone there was a thick layer of tenacious colloid bone cartilage, apparently resulting from periosteal disease. Through this dense and morbid mass radiated fistulous tracks in every direction, many of them containing small spiculæ of bone. The bone itself was diseased from the condyles to within $1\frac{1}{2}$ inch of lesser trochanter. The shaft had been fractured obliquely, with considerable comminution, and union had taken place by formation of a very large amount of dense bony structure, which projected in spurs and ridges in all directions. (See Fig. 7.) The original track of the ball was marked by a deep groove, and one or two small fragments of lead were found imbedded in the bone. There was a large anfractuous cavity, bridged over in places by newly formed bone, which still contained several quite large sequestra. There was incipient periosteal disease along linea aspera up to the trochanters. A section of the bone (see Fig. 8) showed that if osteo-myelitis had existed, it had not extended within several inches of trochanters.

CASE XI. *Amputation at the hip-joint for extensive disease following a gunshot fracture of the femur.*—The following brief facts of the case have been furnished me by one of the attending surgeons of the Episcopal Hospital, Phila., who was present when the operation was performed.

The patient was a discharged soldier; he had been an inmate of several of the military hospitals, was wounded at the battle of Winchester, Va., and received a gunshot fracture of the femur; extensive necrosis with great shortening of the limb followed.

Amputation at the coxo-femoral articulation was performed by Dr. Forbes, one of the staff-surgeons of the hospital, May 5, 1866. The operation in the main was essentially the same as that performed by Dr. Agnew, at the Penna. Hospital. The abdominal tourniquet was applied; the patient lived sixty hours.

From the histories of the foregoing cases, the plan of operation and the results, we are able to present several important deductions in regard

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to disarticulation at the hip-joint, the most formidable of all operations the surgeon is called upon to undertake.

1st. In cases of long-standing disease, tumours involving the bone, soft parts, or both, necrosis following gunshot wounds, reamputations, or where suppuration has existed for a long period, the constitution being more or less accustomed to the drain and irritation, a more favourable result after amputation may be expected than in those cases where the operation has been performed for recent injury, where it has almost invariably proved fatal.

2d. In regard to the choice of operation, the integumentary flap operation, with a circular division of the muscles close to the pelvis, may be considered a safer operation, and is preferred to all others by Professor Pancoast, who adopted this method in both of his cases, as did also Professor Gross in his second case; Cases IX., X., and XI. were also after the same plan; by this there is not so much muscular tissue left to suppurate, and we have more reasonable hope for primary union to a considerable extent. In small shrivelled limbs, illustrated by Cases I. and III., where there is hardly any tissue about the joint, except skin, the flap operation is probably as good.

3d. The loss of blood during the operation being primarily the chief source of danger, we find the abdominal tourniquet absolutely required, and no operation at the joint should be undertaken without it. Having the control of the circulation throughout the extremities, we are able to guard against all loss of blood, which otherwise might tend to develop pyæmia, or even immediately to allow of a fatal collapse.

4th. The after-treatment of the stump by the application of *pure laudanum* (the parts being constantly kept wet with it) was first used by Dr. Pancoast in his first case in 1860, and answered admirably. In his second case, in 1865, he was able to put the patient asleep at any time, by simply increasing the quantity of the laudanum used; more than a gallon of the tincture was thus used in this last case. This dressing was employed in Case IX., which came under my care, and answered every indication.

Acupressure alone has not been fairly tested in this operation. The first time the needles were applied was in 1860, by Dr. Pancoast; one needle was placed on the femoral artery, and one on the femoral vein; the rest of the vessels were ligated, and for additional security a ligature was also placed on the femoral. In Case VII., at which operation I assisted at the Penna. Hospital, the needles were applied to all the vessels, and much blood was lost before they were adjusted; the patient never reacted, and died in about fifteen hours after the operation.

In a procedure of such magnitude, and where the loss of any blood subsequently would be so dangerous, the surgeon would feel better satisfied in the knowledge of having a ligature rather than a needle on the femoral, when it has to be applied so high.

Table showing the Results of Amputations at the Hip-Joint.

Number.	Operator.	Date of operation.	Sex.	Age.	Disease.	Interval between first appearance of disease or injury and operation.	Operation.	Result.	Cause of death.	Remarks.
1	Duffy	1840	Female	6	Morbus coxarius	.....	.....	Recovered	.....	17 years afterwards the patient was successfully delivered in the Lying-in Department of the Almshouse; stump well.
2	Pancoast	1860	Male	32	Medullary sarcoma	One year	Integumentary flaps and circular of muscles; acupressure and ligatures	Recovered	.....	Died 2 years afterwards from a return of the disease in the lymphatics adjacent to the stump.
3	Gross	1862	Female	12	Loss of integument and suppuration following a burn	15 months	.....	Recovered	.....	Remained well. 1864.
4	Hewson	1864	Male	6	Railroad injury	Within 24 hours	.....	Died	Renewed shock	Lived twelve hours.
5	Pancoast	1865	Female	30	Huge osteo-chondromatous tumour	7 years and 8 months	Integumentary flaps and circular of muscles	Recovered	.....	Remains well.
6	Gross	1865	Male	54	Encephaloid	4 years	Integumentary flaps and circular of muscles	Recovered	.....	Remains well.
7	Hewson	1865	Female	28	Enchondroma	Several years	Flap operation; acupressure	Died	Shock	Lived fifteen hours.
8	Packard	1865	Male	21	Reamputation of stump; disease of bone	5 months	Flap operation	Recovered	.....	Remains well.
9	Morton	1866	Male	21	Reamputation for osteo-myelitis	16 months	Integumentary flaps and circular of muscles	Recovered	.....	Remains well.
10	Agnew	1866	Male	48	Disease of femur and soft parts following a gunshot wound	3 years	Integumentary flaps and circular of muscles	Died	Hemorrhage from the femoral 12 days after operation	
11	Forbes	1866	Male	...	Diseased femur following gunshot wound	.....	Integumentary flaps and circular division of muscles	Died	Lived sixty hours	

ART. II.—*On the Predisposing Causes of Epidemic Diseases.*

By A. P. MERRILL, M. D., of New York.

IN view of the prevalence of epidemic diseases, and especially of the present prevalence of cholera, the most general and fatal of modern epidemics, it is important to consider what are some of the more prominent of the predisposing, as contradistinguished from the proper exciting, causes of this class of diseases. These causes are too numerous and varied to be named in detail; but if only a few prominent considerations in regard to them can be duly presented, it may lead to some abatement in the ravages of disease.

As far as practicable the proper distinction should, of course, be made between predisposing and exciting causes, which are often strangely confounded, and sometimes spoken of interchangeably. The former may be held to embrace all those deleterious influences which, by disturbing the normal functions of the body, render it more susceptible than in a state of health to the action of the latter. In the fullest manifestation of these bodily functions, with the usual concomitant of mental health and vigour, man is often enabled to resist the influence of exciting causes of disease so as to escape a prevailing epidemic entirely; or, having suffered an attack, he may be able to overcome the peculiar disturbance of normal function caused by the disease, without the agency of medical treatment. But anything which disturbs these normal functions, whether to the extent requiring remedial measures or not, must be considered a predisposing cause of epidemic disease.

Exciting causes, on the contrary, must be regarded as specific influences, the tendency of which is, under all circumstances, to produce specific results. Thus, the exciting cause of cholera, whatever may be its character and origin, is capable of producing no other disease than cholera, and the same is true of smallpox and all other specific diseases. Each must have its specific cause. Periodic fever, which prevails so extensively throughout the world, is doubtless due to the action of a specific cause, without which the disease cannot exist; but the different varieties of this disease as indicated by the nosology in common use, and dependent mainly upon the particular organs and tissues especially disordered, must be produced by the co-operation of some additional agency, which determines whether the fever at any particular time and place shall assume the epidemic form of a gastric, enteric, hepatic, or pneumonic disease. But whatever may be the type and form, it can scarcely be doubted that those persons are most liable to suffer, who have been living under the influence of certain predisposing causes, such as I shall have occasion to refer to in the course of this essay. While exciting causes are known only by their effects, and we have no means of controlling them, the origin and progress of predisposing causes

are mostly discoverable, and may be prevented or avoided. We must therefore look to the power we have over this class of causes as our principal hope and dependence, in guarding ourselves against the prevalence and fatality of epidemic diseases.

Nothing is more common than to attribute the invasion of an epidemic disease to certain agencies as exciting causes, in the shape of decomposition, giving rise to mephitic effluvia and to every variety of offensive exhalation; but although these may of themselves sometimes excite diseased action in the human system, there are many good reasons for believing that such deleterious influences only prepare or predispose those who are exposed to them, to the operation of the specific and exciting cause of any particular epidemic, the source and character of which cause are alike unknown. It is not less true than fortunate, that it seldom happens that more than one kind of epidemic cause prevails largely at one and the same time and place, the tendency of which is to produce a specific disease, but other diseases, and especially those of a febrile character, will always exhibit more or less of the characteristics of the prevailing epidemic. If the epidemic be yellow fever, persons suffering with smallpox will die of black vomit. If cholera, cases of fever will certainly present symptoms of that disease, and become exhausted by serous evacuations and cramps.

The predisposing causes of epidemic diseases are to be distinguished from the exciting causes by the fact that they operate upon the organism, not to produce a specific disease, but to impair its normal condition, so as to render it less capable of resisting the influence of the true epidemic and exciting cause. No amount of such predisposition caused by unwholesome influences can be supposed capable of originating a specific epidemic disease without the co-operation of the specific cause of such disease. Whenever it is said, therefore, that in certain localities causes of disease exist which may produce cholera, yellow fever, &c., it must be understood that one or another of these diseases may appear and become epidemic in such place, by reason of the prevalence of its exciting cause among a people thus predisposed. To contend that such unwholesome condition may operate as a specific cause of such epidemic, would imply a necessary connection between the reputed causes of disease and the prevailing epidemic, and require us to expect that such epidemic, or several kinds of epidemics, must appear wherever such defective sanitary police is found.

The defective police of cities is sometimes supposed to give rise to the exciting cause of cholera, but in portions of London and Paris such defective police existed to a great extent for centuries, and no doubt favoured the spread of epidemic diseases in those cities more or less every year, without ever producing a single case of cholera, which disease made its appearance only when the proper exciting cause reached those localities from the distant east. Rio Janeiro escaped yellow fever until a recent period, and the disease has not yet made its appearance in Canton, Calcutta,

Constantinople, and many other large eastern cities, notwithstanding, the defective sanitary police of those localities, and the favouring influences of climate. Hence, I infer that these are only predisposing causes of epidemic diseases, and that no specific disease becomes epidemic until the proper exciting cause of such disease appears to co-operate with them. Quite a different example is found in the little city of Natchez, among whose inhabitants squalid poverty found no place, whose streets had never known a beggar, and whose sanitary police was unexceptionable. This gem of a city, situated upon a lofty bluff overlooking the Mississippi River, and injoying the refreshing breezes daily moving inland from the broad bosom of the Gulf, became subject to frequent visitations of yellow fever, and suffered great mortality whenever the specific cause of that disease extended northward from the West India Islands and entered within the boundaries of the United States. It was not, however, until 1817 that the disease first visited Natchez, when a powerful predisposing cause had been created by an extensive grading of the streets, but here, as elsewhere, the epidemic having once made a lodgment, it continues to occur epidemically and sporadically.

The origin of the cholera pestilence has often been attributed to mephitic exhalations from decaying materials floating upon the river Ganges, and also to certain filthy habits and customs of the Mohammedan pilgrims; but the sacred river of India had borne its millions of dead bodies to the sea, and the pilgrims to the holy shrine at Mecca had practised their revolting superstitions for ages before epidemic cholera was known either in India or Arabia. The decay of human carcasses in the one case, and of animal sacrifices in the other, together with all the conditions which are calculated to impair healthful vigour of body, acted all the while as they do now as predisposing causes of epidemic diseases, but without the concurrent agency of the specific and exciting cause of cholera that disease could not exist and did not. When it made its first appearance in India, and assumed in that country all the characteristics of an epidemic, there must have been good reason to expect that it would extend its ravages to Europe; but it took many years to do this, and while there were no signs of its approach the inhabitants of the worst portions of Paris and London were as secure from its attacks as ever before, notwithstanding the existence of all the reputed causes growing out of a defective sanitary police. And the inhabitants of these and other cities are secure still, excepting only that occasional sporadic cases may occur where the disease has before appeared, unless the specific cause of cholera should happen to reach them in its progress round the world as an epidemic, and then its extent and intensity may depend much upon the existence of predisposing causes, such as operate upon the system to prepare it for attacks of other epidemic diseases as well as this.

These predisposing causes may be arranged under the following heads, having reference to their character and origin; namely, *telluric*, *meteoro-*

logic, such as appertain to *domiciliation*, to *hereditary taints*, to *dietetic influences*, and to *vicious habits of life*; and these I propose to consider in their order.

Telluric influences of an unwholesome character, in the existence of which there is such general belief, have hitherto escaped detection by chemical analysis and by every kind of philosophical inquiry; unless, indeed, it prove true that they are due to the existence of sporules from some of the forms of fungous growths, which are said to abound in sickly districts. It is known from long observation that certain forms of disease prevail most in the vicinity of natural marshes, especially when, after having been for a time saturated with water, they have become quite dry. And I am well convinced that these deleterious effects of drying soils are not confined to natural marshes, existing extensively in country localities, but are produced also, and sometimes in greater intensity, by quasi-marshes in cities, artificially created by grading the streets and filling up low grounds, without proper attention to drainage. There appears to be no room for doubt that there are deleterious influences in connection with such localities, whatever may be their character, which operate as causes of various forms of periodic disease, and as predisponents of epidemic diseases.

There is abundant proof of this in New York alone, but the smaller cities of Natchez and Memphis, during my residence in those places, afforded striking illustrations of this doctrine. Yellow fever, cholera, measles, scarlatina, hooping-cough, diarrhœa, dysentery, and other diseases becoming epidemic on different occasions, always prevailed earliest and in their gravest forms in those localities where large deposits of earth had been made, without proper attention to drainage. And it has seemed to make little difference in the result, whether such deposits consisted wholly of fresh-dug earth, or a mixture of common city refuse, and the decomposing materials which abound in what is carted away from the habitations of man, as at once offensive to the senses and injurious to health. In all cities these health-destroying influences prevail more or less; and similar effects are often observed in connection with the cellars of dwellings both in city and country localities, which are a portion of the year kept wet by the oozing of surface water from the ground. In their drying state in summer and autumn, these cellars are as insalubrious as the marshy districts in the open air, affording evidence of the incorrectness of the prevailing opinion, that paludal influences as causes of fever are dependent upon the rays of the sun, excepting only as they facilitate the drying process by the power of solar heat. Sunlight, under all circumstances, appears to be a powerful conservator of health, and the want of it may justly be considered an effective predisponent of disease.

Dry and sandy soils, also, into which the rains readily disappear by absorption, low and barren clay-soils and rocky and precipitous districts, from the surface of which water runs quickly away, the embankments of

canals and railroads, and the beds of inconstant streams, all exercise more or less in dry and hot weather the same deleterious effects as drying marshes, dependent probably upon the fact of their being destitute of vegetable covering. Nowhere else on earth has yellow fever been represented as more malignant in its character than I saw it at the Bay of St. Louis, Mississippi, in 1820, and at Pensacola and other parts of West Florida, in 1822, both being situated on dry, sandy, and barren soils, and the seasons of those epidemic visitations being unusually hot and dry. The epidemic prevalence of the same disease at Natchez and Memphis, as well as the sporadic cases which have occurred upon the lines of certain southern railroads, also afford abundant illustrations of the truth of this theory of morbific causes arising from dry and naked soils. The introduction into the south of that remarkable production, the Bermuda grass, has done much to remedy this state of things, and to improve the public health. Bare soils have not only been covered over, but bayous and gullies have been filled up, and these, together with railroad embankments and levees, have been coated over with a dense sward of vegetable life. The morbific influence of bare and barren localities cannot be due to vegetable decomposition, for vegetation is deficient in quantity, and the want of moisture is unfavourable to fermentation; nor is it dependent upon the previous condition of standing water, as in the case of natural marshes, nor upon the heat and light of the sun, for these are wanting in cellars, but only, so far as is yet known, upon the absence of healthful vegetation, and possibly, the consequent production of certain morbific growths which disorder the normal functions of the body. Periodic diseases are endemic in all such localities, and the cause producing these, whatever it may be, appears to be a predisposing cause of various kinds of epidemic disease. Smallpox, measles, and hooping-cough, which are contagious diseases, and yellow fever, cholera, diphtheria, &c., not contagious, all prevail as epidemics most actively and severely in localities of this kind.

From the earliest period of medical history, these telluric influences have been supposed to exercise their baneful effects upon the health of mankind in all parts of the world, and without its ever having been discovered why it is that, independent of human agency, one locality is more or less healthful than another. No certain clue to the nature and origin of the cause has been discovered, and we only know now what was known and taught by Hippocrates, that marshy districts in their drying state are prolific of fever, and favourable to the spread of epidemic diseases. It may be true and susceptible of proof, that the morbid agencies are due to certain forms of vegetable growth, or to some variety of animalcular life, and that prevention is practicable. Such suggestions have often been made, but we are as yet without any certain knowledge upon the subject, and his will be a high honour who discovers the cause and the remedy.

Meteorologic influences have also, in all ages and countries, been con-

sidered prolific agencies of disease. During the prevalence of epidemics of every kind, whether contagious or non-contagious, we hear much of atmospheric influences and infected air, as affording both predisposing and exciting causes of the disease; and a distinguished medical authority long ago attributed these visitations to an epidemic constitution of the atmosphere, without venturing to suggest in what it consists. The common belief among men everywhere has always been, that maladies prevailing epidemically, whatever their character and severity, are justly attributable to noxious aerial agents inhaled into the lungs. But the science of chemistry, in all its boasted perfectability, has not been able to determine in what these morbific causes consist. Experts with the improved microscope have been equally at fault, and epidemic diseases of every variety have spread over large portions of the earth, devastating cities, villages, and country localities, without being attended in any case by any certain evidence that the chemical composition of the atmosphere is at all changed from the normal standard, or that it is charged with substances to produce such results. On the contrary, it has often been remarked that, so far as can be determined, either by the senses or by chemical analysis, the air, while the most fatal epidemics are prevailing, appears to be of unexceptionable purity.

This appears the more remarkable since the proper constituents of atmospheric air are well ascertained and established; and since so great a uniformity is known to be maintained amid all the mutations incident to chemical decomposition and the exhalations and absorptions of animal and vegetable life. It is, indeed, among the wonders of nature that so great a uniformity is maintained, and the diffusion of the heavier and lighter portions provided for by an unerring and invariable law. Still, the researches of geologists afford reasons for believing that before the creation of the higher orders of animal life, the constituent proportions were somewhat different, and such as would not now answer the purposes of man; showing a providential arrangement for the preservation of life and health. The course of nature in regard to this matter is paramount, and all observation shows that, except in confined localities where the law of diffusion is partially checked, no considerable change in the atmospheric constitution can be effected by artificial means. The closest analysis results in determining the relative proportions of oxygen, nitrogen, and carbonic acid to be maintained everywhere, whether epidemic diseases are prevalent or not. And when epidemics do prevail, it cannot be ascertained that new gases or vapors are infused into the atmospheric mass, to account for the change.

In confined localities, where the law of diffusion cannot have free scope, the proper proportions of atmospheric ingredients may indeed be seriously disturbed; but it has been sufficiently proved that such condition does not always act as a predisposing cause of epidemic disease, and it has even been supposed that these deteriorations in the air respired have served to protect the human constitution from the effects of certain morbid influences.

In 1819 I visited the city prison in New Orleans, and found it closely packed with men whose bodies, nearly naked, were reeking with sweat. There was little chance of ventilation through the small and grated openings, and it was with difficulty that any one could enter it from the open air. The odour was repulsive and sickening, and it cannot be doubted that the atmosphere was deprived of its proper proportion of oxygen. The prisoners presented the appearance of great prostration of vital energy, and some of them sickened and died from the effects of the confinement; but not one had the yellow fever, although the disease was prevailing in the city as an epidemic; and the same is reported in regard to other epidemics of that disease since that time, the city prison being the only place of exemption. Men die in such confinement of suffocation, as in the Black Hole of Calcutta; but they do not contract yellow fever or cholera from epidemic influence as readily as in the open air.

But the atmosphere, although itself unchanged and innocuous, may become, it is supposed, the vehicle by which the invisible spores of fungi or microscopic animalcula are conveyed into the human system as they happen to be wafted to and fro by the winds, each variety of spore or animalcule tending to produce, in proportion to its abundance, a specific form of disease, which in this way becomes epidemic. This hypothesis is not without plausibility, but no certain proof of its truth has yet been presented. The cell theory of physiologists, which accounts for every variety of living structure and much of functional movement by the formation, subdivision, and multiplication of cells, seems to afford a better basis for a theory of causation. Every epidemic disease may be supposed to have its own peculiar cell-cause, operating upon the system specifically to produce its peculiar train of symptoms; and to an extent commensurate with the influences favourable to the reproduction of cells, and the predisposition of bodies acted upon. In contagious diseases these morbific cells may be supposed to emanate from the bodies of the sick; and in diseases not contagious to originate elsewhere. But in both cases alike to be conveyed by currents of air, by ships and animals, by travel and commerce; a single cell, under influences favourable to its growth and propagation, being sufficient to produce its proper disease, under these favourable conditions, in proper time.

This cell theory affords us a better opportunity than either the animalcular or sporule theory for explaining certain anomalies in etiology which present many difficulties; such as the escape from disease of persons crowded into badly ventilated prisons and tenements, and those exposed to certain mephitic exhalations, commonly considered exciting causes of epidemic disease. Certain sections of large cities, streets, wharves, sewers, and cesspools, and various kinds of manufacturing establishments, are productive of mephitic gases more or less offensive to the senses, giving abundant occasion for complaint; but it is far from being true that such localities

are *always* more subject than others to attacks of epidemic diseases. On the contrary, it often happens that an epidemic bears lightly upon those who are thus exposed, while other portions of the same city, more highly favoured in their sanitary police, suffer from the prevalence of the most fatal grade of the disease. It is not to be inferred from all this that such mephitic exhalations are harmless of evil to the human constitution, or that they are not predisposing causes of disease in general, but only that they are unfavourable to the action of the present specific and exciting cause—antagonistic, it may be, to the development and multiplication of the one particular cell-cause then prevailing. Every cell wafted within the scope of such influence may perish for want of its proper pabulum, even under the operation of predisposing causes giving rise to much suffering and mortality.

Electricity and magnetism, temperature, moisture, and atmospheric pressure may, in their varying conditions, become predisposing causes of certain epidemic diseases; but there seems to be no good reasons for believing that any of these, either in their excess or deficiency, are exciting causes, and therefore essential to the prevalence of any particular epidemic. The yellow fever has by some been considered an exception, and it cannot be doubted that heat of climate is favourable to its extension and fatality, inasmuch as the disease prevails as an epidemic only in hot seasons and countries; but it is not essential to its existence, for sporadic cases occur in localities wherever the disease has once been epidemic, both in the hot and cold season, and it is often more severe in the latter than the former. Heat of climate, therefore, although favourable to the prevalence of an epidemic of yellow fever, cannot be considered essential to the existence of the disease.

There must be a specific exciting cause of every epidemic disease, without which the disease does not exist; but, whatever may be the character of this cause, there seems to be a necessity, in the present state of etiological knowledge, for much reliance on predisposing causes, or for dependence upon a mysterious agency sometimes denominated, for want of a better term, *epidemic influence*, or else there would not be times and seasons of pestilence, and other times and seasons of exemption. There must be a dynamic power exercised over the germ of the disease, in whatever shape or form it may be, and upon the existence of which its activity depends. The specific cause of cholera, for instance, must owe its origin, increase, and expansion to some favouring condition without which it would not have been produced, or, being produced, it would have lain dormant forever. As the army-worm which eats away the grass and corn, the cotton-worm which devours the foliage of the cotton-plant alone, and the grasshopper and locust which feed upon vegetation almost indiscriminately, only flourish at certain times and seasons when the conditions necessary to their increase happen to exist, so may these reputed causes of epidemic diseases be dependent upon certain conditions peculiarly favourable to each of them,

and without which they can appear only to a very limited extent, producing at most only a few sporadic cases of disease, however active may be the predisposing causes which invite attack.

The fact, now so well established, that influenza, cholera, and yellow fever, when prevailing epidemically, often attack the crews and passengers of ships at sea, and which could not have derived the disease from any place where it was then prevailing, would seem to justify the conclusion that some meteorologic influence must prevail in mid-ocean, and pass from continent to continent without human agency. But of this nothing is known except the results, and there may be equal propriety in attributing the disease to either animalcules, sporules, or morbific cells, and perhaps also to magnetic agency, but it cannot well be assigned in this case to decomposition or telluric exhalations. In the holds of ships at sea, and especially in long voyages, and in the modes of life among mariners and emigrants, there may be abundant sources of predisposing causes, laying the subjects exposed to them more or less liable to the action of the epidemic or exciting cause; but it cannot be supposed that the disease is in any such case the effect of the former, without the proper and specific agency of the latter. Personal contagion in these cases is quite out of the question; and the communication of the disease by means of exhalations from the dejections of those affected by the cholera, is equally improbable.

Domiciliation.—Although the idea commonly connected with the word epidemic is what its etymology implies, that it refers to a disease visited upon the people at large, it often happens that particular habitations suffer more than others similarly located, and sometimes that the disease confines its ravages to a single domicile. If it be a contagious disease, it will, of course, be communicated to unprotected persons who are exposed to it, and thus be conveyed to other domiciles; but it will still fail to present all the characteristics of an epidemic, except in the household where it appeared and has principally prevailed. Smallpox, measles, scarlatina, and hooping-cough occur in this way; more commonly cholera and yellow fever, and especially diphtheria, which frequently attacks every member of a family where it originates, without extending to any other in the same neighbourhood.

I have known both yellow fever and cholera to be thus circumscribed. In 1854 the cholera was confined to a single block in Memphis, and not communicated beyond, excepting only to a few individuals who had slept within the infected block, or sphere of epidemic influence. It has been a common event in the South for epidemic diseases prevailing among negroes to be confined to a single plantation, and sometimes even to a single negro cabin. Cholera, yellow fever, pneumonia, dysentery, diphtheria, and other diseases have been thus limited within given bounds; and I have been in professional attendance upon a plantation of more than one hundred souls, one-tenth of whom were white persons, not one of whom escaped an attack

of yellow fever within the space of thirty days. From the octogenarian to the new-born babe, all had the disease, and every fatal case terminated in black vomit. So virulent was the epidemic influence in this case, that several persons who had volunteered their services in nursing the sick died of the disease, and in no instance did any one escape who had slept a single night on the premises. Other plantations in the neighbourhood—those within half a mile—escaped the disease entirely, although there was frequent intercourse between them. No case of yellow fever had ever occurred at this place previously, but since that time it has been frequently visited by the disease, sporadically.

It can scarcely be doubted that these limited epidemics, of which little notice has been taken by authors, are due to the same causes which produce more extended ravages of disease. It is from such beginnings, indeed, that the same diseases, under other and more favourable conditions, expand over large portions of the earth. Could we trace the great epidemics to their origin, we should probably find their starting-point to be some obscure domicile, whence they expand in certain directions according to favouring circumstances, and become fatal in proportion to the activity of the exciting cause and the predisposition prevailing among the people. Admitting the truth of the cell theory as applied to epidemic etiology, we may presume that any agency which can give rise to a single morbific cell may, if continued, cause an unlimited multiplication of its cell-kind, and thus account for the prevalence and expansion of the particular disease which is its specific effect upon the human organism, those individuals and communities suffering most severely which are under the influence of the strongest predisposing causes.

In the investigation of predisposing causes, in both cold and hot climates, during the prevalence of epidemic diseases, I have observed that the decomposition of vegetable and animal substances sometimes abounds and sometimes not. The same inconstancy exists in reference to all sorts of filth, crowded tenements, and defective ventilation. Infirmity and predisposition to disease exist, and epidemics prevail, both with and without these conditions, leaving it at least doubtful as to their uniform agency in facilitating the spread of all epidemic diseases. But, so far as my information extends, drying soils which have been long saturated with water, and especially those which are deficient in living vegetable covering, never fail to act as predisposing causes of epidemic diseases, whether in-doors or out. Cellars partly filled with water, like ponds and pools in the open air, are quite harmless of these effects while the water remains in them; but when it is drawn off, or subsides by evaporation and absorption, and while the earth is undergoing the drying process, then it is that the predisponent influence is the most powerful, and disease most likely to occur.

Cities have most to fear from this condition of cellars, while in country localities the out-door influences of drying soils are most likely to abound;

and nothing is more certain than that both endemic and epidemic diseases prevail most where these conditions exist. No doubt they give rise to specific and exciting causes of certain forms of disease characterized by periodicity; and when we observe that all epidemic diseases give preference to such localities, it is fair to presume that the human system is predisposed by them to be acted upon by the specific cause of any epidemic which may at any time prevail, whether it come in the form of electricity, animalcules, sporules, morbific cells, or other agency not yet suggested. While we are aware of these uniform coincidences, it would be unreasonable to ignore the fact of evil influences merely because we are unable to understand the mode of their operation.

To guard against these limited epidemics connected with domiciliation, the same rules should be observed as in cases of the more general prevalence of the same diseases. For obvious reasons, the preventive measures required are the same as in regard to larger fields of operation. Stagnant water resting upon surfaces which are afterwards to become dry, and especially cellars alternately wet and dry, are to be remedied by thorough drainage, and every such out-door surface is to be covered, when practicable, with growing vegetation. These, according to my observations, are essential measures of prevention, and should not be considered of secondary importance to the avoidance of confined air and the products of fermentation.

It is worthy of remark, in this connection, that long observation justifies the belief in the greater prevalence of epidemic influences near the surface of the ground. Other things being equal, those who sleep in cellars and upon the lower floors are more liable to attacks of the disease in its graver forms than such as have their sleeping apartments in the more elevated rooms of the house. This may be considered a reason not only for going to the upper stories to sleep, but also for the construction of elevated dormitories. It may be found safer during the prevalence of epidemic diseases to mount upward for the enjoyment of nightly repose, than to travel any distance without such elevation.

But in regard to individual security, no preventive measure is more to be regarded than that of a removal from the infected dwelling as soon as the presence of the disease becomes well ascertained. This, indeed, is the only course which insures positive safety. There may be benefit in liming, fumigating, ventilating, scrubbing, whitewashing, painting, and a general cleaning and renovating of the premises, but in a large majority of cases it is evident that these measures fail to afford protection to those exposed to the epidemic ravages, and the disease runs its usual course, as if nothing had been done to arrest its progress. Whatever may have been their efficacy as preventives, of which we cannot well judge, it has never been known that an epidemic was arrested in its course by any such preventive measures. When a fatal epidemic once invades a domicile, there can be no hope of removing it by any means yet discovered; and the same is true,

also, of cities and larger districts of country. While the disease does not appear, there may be hope of escaping it; but when it invades a community, large or small, it will certainly continue to prevail for the usual period of its visitations, in spite of all efforts to dislodge it. Not only so, but the particular domicile, city, or larger area of its prevalence will thereafter be subject to returns of the same disease while it continues to afflict mankind. Hence the occasional occurrence of sporadic cases in all such localities; and hence, too, the common fact of the first appearance of subsequent visitations of the same epidemic disease just where it originally occurred; showing either that predisposing causes are more rife there than elsewhere, or that the exciting cause has never been wholly removed.

Hereditary and Constitutional Taints.—Certain temperaments and diatheses are supposed to be transmissible from one generation to another, as well as certain hereditary diseases, such as scrofula and cancer; and the same is true, doubtless, of idiosyncrasies, and predispositions to contagious and epidemic diseases. In these latter cases there is, probably, a hereditary deficiency in cerebral and nervous energy, which is as much a predisposing cause of disease, as the same condition when produced by external agencies, such as we have been considering. The scrofulous, scorbutic, and certain nervous diatheses, with concurring temperaments, which have become hereditary in certain families, undoubtedly have their influence in predisposing the system to the action of the exciting causes of epidemic diseases, explaining the otherwise unaccountable fact, that under the same exposure some who are apparently in perfect health suffer earlier and more violent attacks than others, and that certain whole families suffer greater fatality than others, under the same circumstances.

There may be, in these cases, little or no perceptible sign of existing defects, and yet the predisposition may be found somewhat strong. In fact there are certain idiosyncrasies of constitution which are only developed to our observation when the subject actually suffers from attacks of disease to which they are predisposing causes, just as certain constitutions display an unusual susceptibility to the action of particular medicines, which can be known only by actual experiment. So long as the exciting causes, to the operation of which they are particularly susceptible, do not reach them, whether it be in the shape of epidemic influence, or articles of medicine taken into the system for particular purposes, their peculiar predisposition to be acted upon by them is not discovered, and cannot be known to exist. And this is probably the true explanation of the curious fact, that some individuals and families are so strongly predisposed to certain diseases which are supposed to be capable of affecting the system but once, as to be very perceptibly influenced by their exciting or epidemic causes whenever they happen to be exposed to them, even although they may have gained all the immunity afforded by a severer attack of the disease.

I have often known individuals to be so constitutionally predisposed to

the exciting cause of yellow fever, measles, cholera, &c., that they always experienced decided symptoms of these diseases when prevailing epidemically. In regard to yellow fever, such is my own case. Having suffered a severe attack of the disease in early life, I might have expected the usual exemption from it subsequently, but upon every occasion of exposure to the epidemic influence in numerous instances since, I have never failed to contract the disease in a less violent form; and I have noticed the same thing in other persons. There are persons who are equally susceptible to the epidemic influence of other diseases, experiencing upon every exposure more or less of the distinctive symptoms of the disease. Probably it is more common with cholera than with other epidemic diseases, that persons experience more or less of its characteristic symptoms from every exposure to the epidemic influence, their predisposition subjecting them, indeed, to repeated attacks in the same epidemic visitation; and such persons are liable to suffer from the distinctive symptoms of the disease while residing where cholera has once prevailed as an epidemic, upon every attack of indigestion and diarrhœa, thus giving evidence that some portion of the epidemic cause remains after the epidemic itself has disappeared.

I am not sure there is any remedy for such constitutional and hereditary predisposition to certain diseases, excepting, perhaps, the general one of invigorating regimen with a view to elevate the standard of health. But there is some degree of security against fatal effects in a knowledge of the existence of such predisposition, that timely and efficient measures may be taken in the application of remedies. The susceptibility of the system to the action of the exciting cause of the disease, and to the action of remedies, is only to be learned by observation and experience in each individual case.

Dietetic influences are often predisposing causes of epidemic diseases, and especially of those which are prevalent and fatal to emigrants in hot climates, and of those, also, which are seated mainly in the digestive organs. It is well known that yellow fever epidemics in southern latitudes are most fatal among persons of northern birth; and that even the natives of hot climates, ordinarily exempt from the graver forms of this disease, may become almost equally susceptible to it by adopting to some extent northern habits of life. The negro race present the best illustrations of this truth. In Africa they suffer, in general, from only the milder grades of the disease; but those born in this country, and who have been fed from their youth up, on a plentiful supply of fat pork and corn bread by southern planters, are subject to the more violent and fatal grades of yellow and bilious fevers, of which diseases they die in considerable numbers. Few, indeed, are the cases of fever among those people which can be safely left, as in Africa, to the remedial powers of nature. Active and skilful medication must be resorted to if we wish to cure them, and the frightful mor-

tality which has occurred among them since their emancipation proves the want of it.

This greater predisposition to disease, especially those of a febrile character, is to be accounted for, mainly, by reference to diet. The natives of hot climates, and especially African negroes, live principally on vegetable food, which supplies the system with only a moderate amount of hydrocarbon; and on ripe and acescent fruits, which are not only deficient in this quality, but by their juices afford protection against the scorbutic diathesis which prevails so injuriously among northern immigrants. The common error was strikingly exemplified in 1821, when General Jackson took possession of Florida and marched a body of northern troops into Pensacola. These troops were fed on strong meat diet, with no other vegetable food than sour flour and musty beans. In a short time frightful havoc was made among them by scurvy, which seemed to defy all means of cure and prevention, until the happy thought was acted upon to supply the whole command plentifully with sour oranges and sugar, which proved at once, both curative and prophylactic, and the disease disappeared.

Natives of hot climates in general indulge sparingly in alcoholic drinks, giving preference to the milder kinds of wines, and making up for their want of stimulation, in some measure, by the use of capsicum; while immigrants from the north persevere in their habitual use of distilled liquors, and other hydro-carbonaceous materials so unsuited to a southern climate. So disqualifying are these northern dietetic customs to southern climates that the negroes who are returned to their native country have, equally with the white race, to undergo an acclimatizing process, with only a little less danger of fatal effects. In Liberia and Sierra Leone the mortality among coloured immigrants from America has been very considerable, but this mortality does not extend to recaptured Africans in the hands of slave traders, whose habits of life have not been changed by negro slavery in America.

The habitual use of capsicum in large quantities, so common to the natives of hot climates, and especially in Africa and Mexico, in both which countries nature provides this article in its greatest pungency, may afford some protection against fever, as is sometimes contended by those who use it; but, like other unnatural excitants, it has its evil effects. Hypertrophies and scirrhous indurations in the digestive organs, and especially in the stomach and duodenum, are its common effects, the dangerous character of which is none the less because of the tardy development of the diseased condition. This view is justified by several autopsic examinations which I have made of those who have died at the age of fifty to seventy years, hard scirrhoid balls being found in connection with the stomach and bowels, and strictures of the pylorus and duodenum from indurated hypertrophy of the mucous and muscular tissues.

When epidemic influence tends to the production of fever in southern

latitudes, those immigrants from northern climates who have conformed for any length of time to the proper diet of southern races of men in regard to moderation in hydro-carbonaceous food, and the substitution of vegetables and fruits, are the most likely to escape the disease, or to suffer, if attacked, only its milder grade. Of course the danger of a fatal issue is proportionally lessened. But it must here be remarked that temperance in drinking, and especially the avoidance of distilled liquors, are of the utmost importance in guarding the system against all epidemic influences. The predisposing causes of epidemic diseases are many and various; but among them all none are more to be dreaded and deprecated than the habitual and excessive use of alcoholic drinks. I know of no exceptional disease, and if men wish to avoid and escape epidemics, it behooves them to abstain from stimulating beverages.

Predisposition to Asiatic cholera is always increased by those indulgences in diet and drink which are unusual, and which tend in any degree to impair the healthy tone and vigor of the digestive organs, and especially which interrupt or disorder the secretions of those organs. Physicians and sanitary boards have displayed ingenuity in constructing dietetic rules when this disease is prevailing as an epidemic, and the discrepancies and contradictions displayed are not only curious, but afford abundant evidence of the futility of attempting to enforce any such protective policy. In regard to this matter the maxim holds true, "What is food for one is poison for another." The only fact to be valued is, the danger of disordering the digestive system by the use of food known to be difficult of digestion, or the use of too large a quantity of digestible food, or by irregular and untimely meals, or any of those imprudences which tend to impair the tone of the stomach and bowels. Precisely the same is true in regard to the predisposing causes of diarrhœa, dysentery, and cholera morbus, except that in those cases the predisposing causes of epidemic cholera may become exciting cases of these and other diseases of the digestive organs, which are only occasional and not epidemic. Undue fatigue, sudden transitions of temperature, and want of proper rest and sleep, may also be added to the other predisposing causes affecting the digestive system, as may, also, with great propriety, all mental emotions acting upon the nervous system to depress it and impair its energy.

Vicious habits of life variously predispose to epidemic influences by disordering the healthy functions, and especially those of the brain and nervous system, upon which the exciting cause makes its impression. The physiologists tell us that vegetable and animal food in due proportions is best suited to the nourishment of the body, and to the preservation of health. Common experience confirms this, and teaches, also, that the proper beverages are those only which nature has provided without the assistance of art, namely, water and milk. Whatever is more than these is unnecessary, productive of more or less evil, and may be classed among

the vicious habits of life. The habitual use of opium, tobacco, and other narcotics, including all alcoholic beverages, has an undoubted tendency to cause derangement of nervous function, to vitiate the secretions, and to establish an abnormal condition, operating as a predisposing cause of all epidemic diseases. Long indulgence in such vicious habits prepares the system, like certain hereditary taints, for the operation of morbific causes, and of certain remedial agents, the precise character and extent of which can only be ascertained by observation and experiment, creating, in fact, an artificial idiosyncrasy, which, while such habits are continued, can neither be controlled nor cured.

Nothing is better established than that narcotic influences of every kind gradually wear away the healthy tone and vigor of the nervous system, producing either direct or indirect debility; and that their habitual use also impairs the healthful susceptibility of the brain to those normal influences necessary to the enjoyment of bodily and mental health. It is reasonable, therefore, to expect that persons who have by their vicious habits brought themselves to this condition, will be more predisposed than others to the operation of morbific causes, and all observation proves that such is the fact. To consider the influence of improper clothing, sudden transitions of temperature, sedentary occupations, confined and corrupted atmosphere, irregular and deficient sleep, and many other things which might properly be classed among the vicious habits of life, would be to enter upon the discussion of the whole science of hygiene; the object of which is to teach the great truth, that it is only by a close adherence to the laws of nature and Providence that the human system can be sustained in a state of health, and protected against the baleful influence of causes of disease. By the proper use of every faculty and function, without abusing them by artificial and unnatural means they are best preserved from debility and disorder, and the organs of the body with which they are connected, strengthened, and qualified to resist morbid influences. The laws of life impressed upon the human organism cannot be habitually violated, either by acts of commission or omission with impunity, and the neglect or perversion of a single function has its certain penalty in suffering and disease. There is, indeed, little reason to doubt that the great mortality from epidemic diseases is in great measure due to the influence of unnatural indulgences and excesses, habits of life which are unknown to any but the sufferers, and the deleterious effects of which upon the general health are often scarcely noticed even by themselves; so obscure and insidious are the operations of morbid causes, and so certain are the penalties visited upon those who habitually violate the laws of nature.

141 McDOUGAL ST., NEW YORK.

ART. III.—*Account of Cerebro-Spinal Meningitis, as it occurred in parts of Dubois, Spencer, and Perry Counties, Southern Indiana.* By M. KEMPF, M. D., of Fairmount, Ind.

DUBOIS, Spencer, and Perry counties, in Southern Indiana, are hilly, the soil is argillaceous, with sandstone and coal as the substrata. The land is well drained by numerous streamlets, and intersected by three small rivers emptying into the Ohio River. Here and there are tracts of swamp land—inundated in the rainy season, but generally dry in summer—well timbered, and yielding a rank vegetation.

Cerebro-spinal meningitis made its first appearance in Dubois County in the month of December, 1862, at Haysville, a little village situated on the White River. Preceding the disease, nothing remarkable was observed in either the weather or the prevailing type of disease. The winter was a mild one, not noted for extremes of temperature.

The disease had prevailed for three or four weeks in Harrison County, about forty or fifty miles southeast of Haysville, before it made its appearance in the latter place. That it travelled by contagion, or by any direct route, there was no evidence. The young and male sex were most liable to its attack. It seemed to be checked by mild weather, but reappeared upon the occurrence of a damp, chilly atmosphere.

On its first appearance, cerebro-spinal meningitis was very fatal, overwhelming the patient, as it were, by a single blow. I have known patients to die within two, three, or four hours from the beginning of the attack.

From what I have seen of the disease, I think it may properly be divided into cerebro-spinal asphyxia, cerebro-spinal inflammation, and cerebro-spinal irritation.

Cerebro-spinal asphyxia is generally ushered in with an alternation of chilliness and heat, violent pain in the head and back, pain in the extremities, vomiting, and diarrhœa of a bilious character. The patient presents an appearance as though he was deeply intoxicated. When roused, he will give a half-intelligent look and an incoherent answer. His eyes are dull, injected, watery, and the pupils dilated, or one contracted and the other dilated; the pupil may be round, elliptical, or irregular. Tongue cool and swollen; breath cool. Pulse irregular, feeble, and frequent, though sometimes it is almost natural, calm, regular, soft, and full whenever the system is sinking rapidly and the approach of death is imminent. The surface of the patient is mottled with purplish spots. Cramps of the extremities are common; sometimes there is jactitation of the whole body, but not of the violent character observed in cerebro-spinal inflammation.

CASE I. S., aged nineteen years, a stout male, of sanguine temperament; had enjoyed good health; was taken ill about 2 o'clock at night, March 13,

1863, with violent pain in the head, bilious vomiting, and diarrhœa, which was attributed to a dose of pills he had taken the previous evening. I was called to see the patient at 4 A. M., and found him with dull features of a purplish hue; eyes injected and rolling about in the socket, with a vacant expression; pupil contracting and dilating by turns—on the approach of light it would contract for a moment, then immediately dilate again; tongue and breath cool, and the former swollen and slightly coated; pulse feeble, frequent, and irregular; surface cool, and mottled with purplish spots, some as large as a split pea, others, again, as large as a fifty-cent piece. By strong pressure the spots would partly disappear. If the patient or one of his extremities was moved, he would exclaim as though in violent pain; strong pressure, especially on the extremities, produced the same result. There was no spasm or convulsion, but now and then slight twitchings of the extremities. There was stupor, with low, muttering delirium; the patient had all the appearance of being intoxicated. Sight and hearing both much impaired.

Treatment.—℞. Eth. sulph. ℥ss; terebinth. spir. ℥j; brandy ℥iv; syr. ℥v. M. A tablespoonful to be given every hour. ℞. Capsici. pulv., camph., āā ℈iss; calomel. ℈j. Ft. pulv. v, one every hour. Counter-irritation to spine; warmth to extremities. The patient died at 3 o'clock P. M. of the same day.

CASE II. H. B., a fine boy 7 years of age, left home at 8 o'clock in the morning to attend school, a half mile distant, and returned about 10 o'clock, complaining of violent pain in the head. As the child had been subject to ague, the parents attributed his symptoms to an attack of that disease; but as he soon became insensible, and his surface covered with purplish spots, I was requested to see him at 2 o'clock P. M. I found the child comatose; insensible to shaking or pinching of extremities; to all appearance blind and deaf; eyes injected and turned upwards, pupils dilated; pulse perfectly natural. This condition was found to be in every instance a very unfavourable symptom.

Treatment.—Injections of turpentine and assafœtida; cloths dipped in boiling water applied along the spine; cold douche to head. Death occurred the same evening.

CASE III. A. B., a stout lad 15 years of age, on his way to church, was attacked with violent headache, vomiting, and diarrhœa, shortly followed by severe cramps in extremities, and paroxysms of general convulsions. Pulse feeble, irregular; surface bluish, presenting a mottled appearance, cool, and bedewed with a clammy perspiration; delirium of a low, muttering character. The child sank into a comatose condition, and died three hours from the time when he was first taken. His brother, a boy aged 13 years, was taken sick in the same way, and died five hours after the attack.

CASE IV. F. B., a stout lad, was attacked about the same time and with the same symptoms as the above, and died six or seven hours afterwards. He was a cousin to the brothers of Case III.

Cerebro-spinal meningitis, the sthenic type of the disease, with evidence of inflammation of the meninges of the brain and spinal cord, generally commences with a peculiar nervous agitation, wandering pain of a rheumatic or neuralgic character, followed by a chill and by inflammatory

reaction; pain in the head, darting from temple to temple; pain along the spine and in the extremities, much aggravated by movement or pressure; acute sensibility of the surface, the least pressure or the slightest touch causing the patient to moan or scream; high vascular excitement. As the disease advances, the patient becomes more or less delirious, his countenance having a wild expression. He is often affected with cramps of the extremities, tetanic spasm, or hysteric convulsions. The eyes are injected, and intolerant of light; the pupils are generally contracted, though sometimes one is dilated and the other contracted, the edge of the pupil being round, oval, or notched; the pupil itself is either clear or opaque, with a milky or greenish effusion—this is generally, however, a symptom of the latter stage of the disease; there is defective vision, muscæ volitantes, or complete amaurosis. The sense of hearing is sometimes very acute, again very obtuse or totally lost. The stomach is generally irritable, with more or less vomiting of a bilious character. The bowels are mostly costive. Urine high coloured and scanty. In most of these cases herpetic eruptions appear about the mouth and nose. A prominent symptom, which has been considered by some writers as pathognomonic, is generally present, namely, spots or petechiæ of a scarlet colour, generally minute in size and few in number, though in some instances they cover the greater portion of the surface of the body. In the malignant type, the skin presented a maculated appearance, of a dull crimson or deep purple hue.

The duration of cerebro-spinal meningitis is from twenty-four hours to two or six days; the majority die between the latter periods, but now and then a case is protracted for several weeks or months. The patient, after becoming convalescent from an acute attack, and, to all appearance, out of danger, may have a slight exacerbation towards evening, slight pain in the head, cloudiness of intellect, and indistinct articulation. He may complain of dimness of vision, anomalous sights, or one eye may be perfect and the other nearly blind. He may have buzzing in the ears, hear unusual sounds, or the organ may be too sensitive or too obtuse. I have visited patients in whom the analogy between intermittent fever and the disease under consideration was so perfect that the most circumspect would be deceived.

CASE V. *Cerebro-Spinal Meningitis.—March* 24. Called to see A. R., a healthy girl 13 years of age, sanguineous temperament. She was taken sick about 8 o'clock in the morning, with vomiting, and pain in the head and spine. When I saw her, 2 o'clock P. M., I was struck with the close resemblance of the symptoms to those of hysteria; and if cerebro-spinal meningitis had not been then prevailing, I should not have felt the least alarm about the patient. She was throwing herself about the bed, two females trying to prevent her from injuring herself. Her head was drawn backwards. She attempted to pull her hair, or to scratch her face, or to bite her fingers, moaning and screaming as though she was in great agony. Now and then her whole frame quivered, as though she had received an

electrical shock. I inquired of the mother whether the girl was subject to such attacks; she assured me that she never had the like before. Examining the patient more closely, I found her eyes were wild and injected, the pupils contracted, but oscillating; countenance flushed; pulse full, frequent, and hard, and now intermitting. She did not pay the least attention to remonstrance, and the more the attendants attempted to guard her from injury, the more she would scream and rave. In pity to the poor girl, I put her, after much trouble, under the influence of chloroform, and kept her so for several hours. When the anæsthesia ceased, the patient was still delirious, but more manageable, and occasionally she gave an intelligent answer to a question put to her about her condition. The spasms had lost their tetanic character, and there was rather a twitching or jerking of the extremities, especially when touched or moved. The patient having had no passage from her bowels for some time, I succeeded in making her swallow a full dose of calomel, which was to be followed, in the course of seven hours, with infusion of senna with salts, and an enema of castor oil and turpentine, if needed.

25*th*, 9 A. M. Was agreeably surprised at the improved condition of the patient. She had become more calm; her bowels had been well acted upon; urine scanty and high coloured. There was still pain in the head and along the spine, much augmented by moving or pressure; eyes injected, and still very sensitive to light; noise was disagreeable to her; pulse full, frequent, hard, and regular; tongue coated with a thick yellow sordes. Ordered—℞. Calomel. ℈j; ipecac. gr. vj. Divide into three powders, one to be given every three hours. ℞. Tinct. veratri gtt. iv; aquæ lauro-cerasi ℥j; syr. simp. ℥j. To be given every two hours until the pulse became reduced, or some constitutional effect ensued. Several small blisters along spine; cold applications to head. 3 P. M. Patient's condition much worse than in the morning; her symptoms much the same as on the previous day.

26*th*. The patient had again become more calm; her eyes partially closed, and little affected by light; her hearing was very imperfect; intellect dull, incoherent—uttering unintelligible words, or rather sounds, when loudly spoken to; pulse feeble, irregular; calomel defecation, very offensive and involuntary; spasmodic starting of the muscles; subsultus; gives no indication of any particular pain; appears to desire little drink or nourishment. Ordered the patient to have milk-punch, brandy, and chicken-broth. ℞. Quiniæ ℈j; camph. pulv. ℈iss; sacchar. alb. q. s. Divide into ten powders, one to be given every two hours.

27*th*. Patient comatose; insensible to light and noise; eyes covered with a film, and, when touched with a feather, there is but little indication of sensibility; pupils dilated, irregular, and of a greenish appearance; herpes around her mouth, which had already appeared on the day previous; sordes about teeth and lips; tongue dark, dry, and cracked; subsultus; stools and urine very offensive, and passed involuntarily.

28*th*. Patient's condition about the same as yesterday, with the exception that her head is drawn backward, and firmly fixed in this position. She died at 5 P. M. the same day. No *post-mortem* permitted.

CASE VI. B. K., a stout boy 17 years of age, sanguineous temperament, was attacked on the 2d of April with a violent chill, darting pain through the head, pain along the spine, and bilious vomiting. Visited the patient about twenty-four hours after he was first taken ill. His face was then flushed; some petechiæ of a bright colour; eyes injected, with a brilliant and wild look; pupil contracted, very sensitive to light; intellect wanting;

delirium—the patient would drive his horses, or command or coax the children to do their work, or rove about the field with his dog; much jactitation, but no real spasmodic or tetanic convulsions. He appeared to suffer much pain from any movement; pressure, especially on the extremities, gave much pain. Pulse full, throbbing, and quick; bowels costive; urine scanty and high coloured. Bled to about twenty ounces. ℞. Calomel. ℈j; jalapæ pulv. ℈iss. Divide into two powders, and give one every three hours; five hours after the second powder, senna and salts. After the patient was well purged, gave—℞. Tinct. verat. virid. fℨj; aquæ lauro-cerasi ℥j; morph. sulph. gr. j; syr. limon. f℥iv. Dose, a teaspoonful every hour or two until it reduces the pulse, then use at longer intervals. Cold applications to head.

April 3. Patient well purged; stools dark and very offensive; incontinence of urine; intellect obtuse; low, muttering delirium; eyes watery, still injected, but much less brilliant than yesterday; strabismus of left eye; pupils oscillating; tongue covered with a thick dark-brown coat; herpes about nose and lips; pulse full and frequent; slight subsultus. The bleeding had done the patient harm. Discontinued sedative mixture, and gave—℞. Quiniæ ℈j; camph. ℈ij; opii gr. iij; capsici ℈iss. Made into twelve powders, one every two hours. ℞. Chlorate of potassa ℨj; water Oj. To be taken during the day.

4*th*. The condition of the patient much the same as yesterday. Continue the powder, and in place of chlorate gave—℞. Ammon. muriat. ℨj; aquæ ℥iv. Dose, a large tablespoonful every two hours. Brandy, milk-punch, and nourishing broths; blister to nape of the neck; inunction of Granville's lotion, with mercurial ointment, along spine; blister to extremities Petechiæ larger, less numerous, and of a more purple colour.

5*th*. Patient comatose; subsultus; sordes about teeth and lips; tongue black, dry, and fissured. Death took place towards evening.

CASE VII. Mrs. L. G. was attacked with a severe chill, followed by intense headache, violent pain in the cervical region, also darting pain along spine; pain in the extremities, with slight cramps; mind flighty; face flushed; eyes injected, look anxious; light and noise painful; bowels costive, no vomiting; pulse full, strong, throbbing; tongue but slightly coated; no petechiæ as yet had made their appearance. ℞. Calomel ℈j; jalapæ ℈ij. Divide into three powders, and gave one every three hours; afterwards senna and salts. ℞. Morph. sulph. gr. ij; calomel gr. vij; sacchar. alb. ℈ij. Seven powders, one every two hours. Remained with the patient until some effect of the morphia evinced itself; and as it appeared to do good, it was continued. Cold applications to the head.

April 3. The patient has been well purged; looks more calm; complains less of her head and spine; face still somewhat flushed; less sensitive to light and noise; some twitching of muscles; sensation of extremities painfully acute upon pressure; circulation still excited; urine high coloured, but not scanty; some few petechiæ of a bright red over chest and forehead. Continue morphia powders, with the addition of five drops of veratrum viride, to be increased one drop every dose until it has the desired effect.

4*th*. Patient much improved since yesterday. Complains of the effect of morphia and veratrum viride, which were directed to be given at longer intervals. Ordered the following: ℞. Quiniæ sulph. ℈ij; acid. sulph. aromat. ℨj; syr. limon. ℨj; aquæ font. ℨiij. Of which a large tablespoonful was given every two hours until cinchonism was produced, or earlier if any bad effect resulted.

5th. The patient is convalescent; she did not suffer a relapse. She took about thirty-five grains of quinia.

CASE VIII. On the 7th of April I was requested to see Miss C. P., a stout young lady 18 years of age, who was attacked with precisely the same symptoms as in the case of Mrs. G. The same treatment was pursued, and with the same happy result.

CASE IX. On the 5th of April, Mary ——, a delicate girl, aged 13, was attacked with vomiting, pain in the head, and pain in the cervical region of the spine. Flushed face; eyes injected; sensitive to light and noise; bowels loose; pulse quick, hard, and with now and then an intermission; nervous tremors; delirium of hysterical character. Ordered the following: R. Calomel ℈j; morph. gr. j; sacchar. alb. ℈ij. Divide into seven powders, one to be given every three hours with a teaspoonful of the following mixture: R. Tinct. verat. virid. f℥ss; syr. limon. ℥ij; mucilag. acaciæ ℥j. A dose of castor oil to be given in the morning.

April 6. The patient somewhat better. Has had several calomel operations. Pain in head and spine much less. Has vomited several times. The veratrum viride has reduced the circulation very much; the fainting spells, of which the patient had several, were probably produced by the medicine. Continue same treatment, but medicine to be given at longer intervals. Cold applications to the head, and mustard to the nape of the neck. These were ordered yesterday, but they appeared to fret the patient, and were therefore discontinued. To-day she is more calm, and submits to their application.

7th. Patient still improving. Ordered—R. Quiniæ ℈j; acid. sulph. aromat. gtt. x; syr. limon. ℥ss; aquæ ℥ij. Dose, a tablespoonful every two hours. Discontinue the morphia and calomel powder and veratrum.

8th. She has taken all the quinia; cinchonized. No symptoms of the disease remained after the effects of the quinia had disappeared. She suffered no relapse.

CASE X. Mr. P. requested me to visit his son, a fine boy, aged 5 years, who had been taken sick towards morning, April 3, with a chill and vomiting; but as the child had suffered from ague, the parents were not much alarmed till the patient commenced to scream from the violence of the pain in the head; and when they were about to move him, he was taken with convulsions. I saw him at 2 P.M., and found him labouring under opisthotonos, with hands clenched, and occasional cramps of extremities. The intellect was abolished. Appears to suffer acute pain upon moving the extremities, or when hard pressure is made on them and along the spine. Eyelids partially closed; eyes injected, and rolling about the sockets; pupils contracted. Pulse frequent and throbbing. Bowels acted freely without medicine. No "spots" were visible. Put the patient in a hot bath; applied a cold douche to the head, which was continued for half an hour; when the symptoms somewhat abated, the patient was removed to bed. Cold application to head and blister to nape of neck, with the following enema: R. Ol. terebinth. ℥ss; tinct. opii ℥j; ol. ricini ℥iv; aquæ fervent. Oiss. One-third to be given every hour. When deglutition became practicable, one of the following powders: Morph. sulph. gr. j; calomel. ℈ss; sacchar. alb. ℈ij. Mix and divide into eight powders, one to be given every two hours. If an intermission should take place, a tablespoonful of the

following: ℞. Quiniæ sulph. gr. xv; acid. tart. ℈ss; syr. simp., aquæ font., ℥iij. To be given every two hours.

April 4, 8 A.M. Patient's condition is much improved. Opisthotonos disappeared. No cramps of extremities, though an occasional twitch or jerk. Intellect somewhat restored; appeared to notice things, and now and then gave a rational answer to interrogations about his condition. Eyes injected; pupil contracted, oscillating on approach of light. Pulse 110 to 115. Skin moist. Petechiæ very plain, of a dull red. Three of the powders had been given. The injections remained but a short time with the patient. Ordered the powders to be continued, with the addition of two drops of veratrum viride, and increasing one drop every two hours.

5*th.* The child is doing pretty well this morning. Pulse 100, soft and calm. Intellect good; only slight flights of delirium. Still complains of pain on pressure of extremities and spine. Not much pain in the head. Eyes still somewhat injected; pupil prone to vacillate. Has had several calomel discharges. Micturated freely. Vomited several times green-looking "stuff," and, as the patient is much nauseated, ordered the veratrum viride to be continued. He had taken no quinia yet, which was now commenced with. A tablespoonful of the mixture I had left every two hours, with the morphia and calomel powders in the intervening hours.

6*th.* Doing well; parents highly delighted. I had, I confess, the same delusive hope of soon seeing their child well. He had taken about two-thirds of the quinia mixture, and appeared to be cinchonized; said he could not hear well, and had buzzing in the ears; it was, therefore, discontinued. Ordered light diet and close watching of child.

7*th.* Has suffered a relapse. Pulse frequent and feeble; eyes injected, watery, covered with a mucous film, pupils dilated; hearing obtuse; intellect blunted; jactitation; tongue dark-coloured, dry; teeth covered with sordes; herpes about nose and mouth; bowels acted freely; patient in a typhoid condition. Ordered milk-punch, brandy, ammon. murias; blister to nape of the neck and extremities.

8*th.* The patient sinking; subsultus; pulse very frequent and feeble; mouth and nose incrusted with herpes and sordes; one eye is dull and watery, of an almost natural colour; the other is of a greenish colour, caused by an effusion of serum or lymph; hearing abolished. Patient died about 9 P. M.

To recapitulate the treatment most in vogue for the cure of cerebro-spinal meningitis, I may state that bleeding was very unsuccessful in my hands. Dr. Huber, who has seen and treated a great number of cases, reports favourably of it in some cases. Opium and its preparations have proved the best remedies, provided the patient is seen early in the disease. A full dose of calomel (gr. x), with a full dose of morphia (gr. j), for an adult, and in proportion for children, followed in five to seven hours with senna and salts. If the bowels were well acted on, calomel and morphia powders—the calomel in small, the morphia in sedative doses—repeated every two hours, was a prescription I frequently gave, and, I think, with success in some cases. In conjunction with morphia and calomel powders, I gave veratrum viride; the latter does much good, if properly administered, by its sedative effect. Cold applications to the head, I think, had a good result. Of counter-irritation to the spine I cannot speak favourably.

I am confident that quinia is very proper in some cases. The intermittent character of the disease, the herpes about the mouth, and the "spots" or petechiæ, which appeared in the epidemic of intermittent fever of the summer and fall of 1865, would seem to indicate some kind of relation between the two diseases—cerebro-spinal meningitis and intermittent fever. Quinia, at a proper time and in proper sedative doses, is therefore a remedy upon which we should presume, *a priori*, that great reliance should be placed, as I think I have learned from experience. Dr. Huber thinks that it does harm; while Dr. Schüntermann, who has used the remedy largely, speaks highly of it. I have tried a great number of other remedies, but can say little in their praise. In the chronic form, ammon. murias and brandy, I think, have done more good in my hands than any other remedies.

In cerebro-spinal asphyxia I have generally failed by any plan of treatment to save my patients, and the other physicians with whom I have conversed about the epidemic do not claim any success. I think the alternation of warm water and ice-bags to the spine would be of service, and probably the inhalation of oxygen.

Of *cerebro-spinal irritation* I will only remark that, on the decline of the epidemic, a great number of individuals, especially adults, complained of headache, malaise, neuralgic pains in various parts of the body, and pain in the nape of the neck or other parts of the spine. The ailment readily yielded to morphia and quinia. Cerebro-spinal irritation very likely was a precursor to the graver forms; but as not much alarm was felt before the epidemic had made some ravages, the physician was not consulted in this minor form of the epidemic.

ART. IV.—*Contributions to Aural Surgery. On Catarrhal Inflammation of the Cavity of the Tympanum occurring in Young Persons.* By D. B. ST. JOHN ROOSA, M. D., Clinical Lecturer on Aural Surgery and Ophthalmology in the University of the City of New York, late Aural Surgeon to the N. Y. Eye and Ear Infirmary.

As is well known, inflammatory affections of the ear are very common among young persons. An "earache" is one of the most frequent of the ailments of childhood. Besides the fearful pain which it involves, it may have consequences dangerous to the integrity of the organ affected. The mucous membrane of the tonsils and pharynx is probably the most common starting-point of these inflammations; from thence the passage along the Eustachian tube to the cavity of the tympanum is not only a very easy, but, as experience proves, an extremely frequent occurrence.

Thus, in the course of one of the exanthemata, acute catarrhal inflammation of the middle ear arises, which in weakly constitutions readily becomes purulent, and ulceration with perforation of the membrana tympani, one of Nature's conservative processes, takes place. It is not the purpose of the present article to speak of the cases which have thus been outlined, but of a variety of catarrhal inflammation of the middle ear, somewhat different from these, yet having many analogous points. They are inflammations occurring in young persons without any positive exciting cause, although such a provocation is not always wanting. They are cases which, with the means now at our hands, are peculiarly amenable to treatment, and furnish the most gratifying results. The subjective symptoms of the affection may be stated as follows: It is observed that the patient without perhaps suffering very often from pain in the ear, is very often somewhat hard of hearing, being so much so as not to hear ordinary conversation. This passes off without treatment, but the trouble recurs, the attacks become more frequent, and finally in the course of a few months or years, the patient settles down with a continued impairment of the hearing. The general health is not apt to be much impaired, although some defect in nutrition is generally found. Objectively the following symptoms are observed: The pharynx is found in a state of inflammation, little elevations like granulations are seen on its surface, the secretion is in excess. The tonsils may or may not be hypertrophied. The membrana tympani, instead of having its normal "neutral gray" colour, is of a pinkish hue, with an exceedingly brilliant appearance. The vessels are not generally to be distinctly traced on any part of it. The triangular light spot is either entirely absent, or is smaller than normal, indicating that the position of the drum is changed. It is apt to be the case that proper hygienic rules have not been observed in the management of the young patient, who has been allowed to eat and drink food improper for growing persons, for example, tea and coffee, pastry, &c., to the greater or less exclusion of simpler and more nutritious substances, and thus a capricious state of the appetite has been induced. In the case of boys, frequent and prolonged bathing, ducking the head under the water, is sometimes found to cause an attack of, or to increase the hardness of hearing. The hearing, as tested with the watch, is found very much impaired, and only conversation specially addressed to the patient, and this in a loud tone of voice, is heard.

The regulation of the diet of such patients, the wearing of flannel next the skin, the abstaining from any habits which may be recognized as predisposing to inflammation of delicate structures, building up of the system by a proper therapeutic course, such as the exhibition of cod-liver oil, ferri iodidi syrup., etc., with proper local attention to the mucous membrane of the pharynx, will undoubtedly in time, allow Nature to relieve these cases; but the impairment of hearing, which is the most striking and

troublesome symptom, will be the last one relieved. We have, however, the means at our hands, as was indicated above, in Politzer's method of rendering the Eustachian tube pervious, of instantly improving the hearing, thus removing the most embarrassing symptom, while we go on with the proper general treatment, curing the disease on which this symptom depends. The use of the Eustachian catheter will probably accomplish the same ends, but its employment, though not entirely impracticable, is very difficult in young persons. Politzer's method is now so fully known to the profession, that any description of it seems unnecessary; yet for the sake of completeness in this article, we may say that it consists essentially of blowing air into one nostril from a gutta-percha bag, the other nostril and the mouth being closed, the patient swallowing at the moment the air is blown.[1] It may be supposed that the impairment of the hearing in these cases is due to a plugging up of the faucial orifice of the Eustachian tube, and also of the calibre of the tube by mucus, which is suddenly expelled by the column of air driven in. Structural changes, that is, thickening of the mucous membrane, bands of adhesion such as obtain in old cases of chronic catarrhal inflammation of the middle ear, have not probably occurred. Indeed, the appearance of the membrana tympani, as it has been described, substantiates this view, there being generally no thickening of the layer of mucous membrane observed either on the periphery, or across its surface. If, however, such changes have occurred, the improvement to the hearing will be correspondingly less. The nature and treatment of this affection may perhaps be better illustrated by the recital of a few cases, than by any further remarks.

CASE I. Willie S., aged 11, St. Louis, April 28, 1865. Has been growing deaf for some months, is rather delicate. His appetite is extremely capricious, drinks tea and coffee in great excess. He cannot hear ordinary conversation. The left membrana tympani is of a pinkish hue, the right secretes a slight amount of pus, is however intact. The tonsils are somewhat enlarged. Hears an ordinary ticking watch (which should be heard from three to five feet) five inches on the right side. One inch on the left. Politzer's method is practised two or three times, when the hearing distance was doubled by the watch on the left side, and ordinary conversation was heard with some ease. He was seen every day or two until May 4th, when he returned home, hearing the watch more than two feet on the left side, and six inches on the right, and was not at all perceived to be deaf in conversation. The appropriate constitutional treatment was carried out, only nutritious diet was allowed, an astringent was applied to the right drum, and Politzer's method was practised every two days. This treatment was still carried on at his home by other hands, and the patient was heard from as being still further improved.

CASE II. F. S. B., aged 16, N. Y., September 1, 1865. Has been deaf at times for a number of years, and for the past summer persistently so.

[1] *Vide* Braithwaite, Part xlix. p. 178.

His general condition is fair, is well developed. The tonsils were so much hypertrophied as to impede respiration, but they were removed previous to his coming under my observation. The pharynx secretes excessively as well as the nasal mucous membrane. There are numerous granulations scattered over the pharynx. The drums are pinkish, brilliant in appearance. The light spot is elongated. The watch is heard about six inches from each auricle.

Politzer's method was practised three or four times when the hearing distance extended to sixteen inches on the right side, and ten on the left. A gargle containing iodine and brandy was ordered to be used twice a day; he was also to practice Politzer's method twice a week, in connection with the iodine inhaler. The patient continued to improve, and at the present writing, April 20, 1866, the treatment has been abandoned, the hearing power being nearly if not quite normal. The patient goes to school every day. He was seen by me for some weeks, once a week, while his father, who is a distinguished physician of this city, carried out the treatment at home, which consisted in the use of the gargle, inflating the middle ear by Politzer's method once in three or four days, with attention to the general health.

CASE III. Edgar S., aged 17, Conn., October 20, 1865. Since the patient was four or five years old he has had more or less trouble in hearing. A few years ago the ears discharged and pained at intervals. The general health is fair; he is tall, well developed except that he is pigeon breasted. Hearing distance with watch, right ear, one inch. Left, two inches. The right drum is sunken, and is quite white in colour; no light spot exists. The left drum is intensely reddened and sunken; the centre seems to be united to the wall of the cavity of the tympanum. After the use of Politzer's method in combination with a bulb containing a sponge saturated with tincture of iodine[1] a few times, the hearing distance on the left side was increased to eight inches, but it remained the same. He also heard and pronounced after the speaker words spoken eighteen feet off, while a few moments before he could only hear them six feet. A Politzer's apparatus was ordered to be used at home under the direction of his father twice a week for a month, a slight counter irritation to be kept up over the mastoid process, when he was to report himself.

Nov. 26. The patient again presented himself, having carried out the treatment as directed, and can now hear the watch on the right side three inches, on the left *twenty* inches and more. He hears conversation with ease. Patient was directed to desist from treatment. He has not been seen since.

CASE IV. Michael W., aged 13, at Eye and Ear Infirmary, November 2, 1865, a delicate, bright-looking boy. Whenever he has a cold (as his father says) "it falls to his ears, and he gets deaf." Right membrana tympani pink and sunken; left sunken, but of about normal colour; tonsils have been ulcerated; pharynx secreting excessively; hearing distance, right ear, four inches; left, three inches. He was seen twice a week until January 17, 1866; iodized air being used by Politzer's method at each visit; cod-liver oil and ferri iodidi syrup. were administered. He had occasional partial relapses, but was at the above date discharged cured. His hearing improved at the first use of the method very markedly.

[1] Amer. Journal Med. Sciences, Jan. 1866, p. 108.

CASE V. Girl aged 16, at Ear and Eye Clinic in University Medical College, March 28, 1866. Has not heard ordinary conversation for years, and has been very much embarrassed in swallowing and breathing on account of enlarged tonsils; general condition is fair; the voice is extremely nasal; only hears when addressed in a loud tone of voice; the watch is heard two inches on the right side, one inch on the left; membrana tympani present nothing striking in appearance, except that they are quite brilliant; the tonsils are excessively hypertrophied. The use of Politzer's method immediately improved the hearing somewhat, which improvement lasted according to the patient's statement about a day. When next seen the tonsils were excised with the forceps and scissors, a long outgrowth being dragged down from behind the soft palate on the right side, which must have pressed upon the orifice of the Eustachian tube, and then the iodized air was driven into the tube. The hearing distance became two feet on the right side, and about six inches on the left. An iodine gargle was ordered, with cod-liver oil, a half tablespoonful to be taken three times a day. The patient is now under treatment, and still, April 26, 1866, continues to improve, hearing very well, with no trouble in respiration. It is, perhaps, needless to narrate more cases, of which more quite as striking, both in private and public practice, could be presented.

Such cases as the above are perhaps those which above all others show the excellency of Politzer's method, and for which it is especially adapted. It is confidently asserted that its use in the treatment of this class of patients will render the progress of the case highly satisfactory, which under the old method could be hardly said to be the case. After the first use of the instrument the improvement which occurs will probably only last a day or two, but I have never known the hearing to become worse, and the repeated (say three times a week) practising of the method will render the improvement permanent. The method is only an adjuvant, which is a fact to be carefully borne in mind, and the necessary general treatment should never be lost sight of.

I was led to the attachment of the bulb or inhaler containing the tincture of iodine, to the simple apparatus of Politzer, from the need felt of introducing some substance into the cavity of the tympanum which should promote absorption in the mucous membrane of the tube and middle ear. This want is supplied by the introduction of the iodized air, and my experience serves to show that the combination produces a more powerful and permanent effect than is produced by the use of simple air.

ART. V.—*Observations in Clinical Surgery.* By JOHN ASHHURST, Jr., M. D., one of the Surgeons to the Episcopal Hospital.

BELIEVING that there is no class of surgical papers more practically useful than that which embraces reports of cases, I propose to place here on record the histories of several patients, who have been under my

immediate care at the Episcopal Hospital during the past year; and in my selection shall pay regard, not so much to the rarity or intrinsic interest of the cases, as to the bearing they may have, and the instruction they may convey upon certain practical points of almost daily recurrence.

I. *Cases in which Acupressure has been employed as a Means of Controlling Hemorrhage.*

CASE I. *Amputation of forearm; acupressure by the third method of Prof. Simpson; recovery.*—John Clouden, a factory hand, a native of this country, 19 years of age, was admitted September 2, 1865, having had his right hand seriously crushed and mangled by being caught in the picker of a cotton mill a short time previously. The laceration extended for some distance upon the back of the forearm. There was considerable shock, but not enough to forbid immediate amputation.

The patient having accordingly been brought under the influence of ether, the forearm was removed at its upper third by the ordinary circular operation. Five arteries were secured by acupressure, employed after the third method described by Prof. Simpson, viz., by passing an ordinary sewing needle (gilt to prevent corrosion) under the artery, and securing the vessel above the needle by a loop of passive iron wire, the needle being itself threaded with iron wire to permit its being withdrawn when desired, and the two wires being then brought out together and twisted beyond the line of incision. By this method, which is perhaps the most secure in which acupressure can be used, the artery is partially twisted upon itself, and secured between the needle and the half figure of 8 turn made around it by the wire loop.

Hemorrhage having been checked in this way, the edges of the incision were brought together by points of the interrupted suture, lead wire being employed, and the stump was dressed with a fomentation of pure laudanum, which I have always found the best and most comforting primary application to stumps as to almost all extensive wounds.

Two needles were removed on the third day, and the others on the fourth; it being found necessary on account of their obliquity to the line of incision to break up the adhesions which had formed. This disadvantage could have been obviated had it been foreseen, by slitting up the cuff of integument at one side of the stump, or by employing one or other of the different flap operations. Until after the removal of the needles the stump was greatly swelled, and the five sharp points and ten iron wires certainly produced, for the time being, more irritation than I have seen caused by silk ligatures. As soon, however, as the needles were removed the swelling rapidly decreased, and the wound of amputation as rapidly healed; a mere linear ulcer remaining on the twentieth day, when the man was made an out-patient and passed from my immediate care.

CASE II. *Double amputation for railroad injury; acupressure in one stump and ligatures in the other.*—Michael O'Donnell, a schoolboy, five years of age, was run over by a locomotive on the North Pennsylvania Railroad on the afternoon of September 29, 1865, and was received into the Episcopal Hospital about half an hour after the occurrence. When I saw him, about 8 o'clock in the evening, he had already reacted and was beginning again to go down; he was sleepy, and his mind partially affected by the whiskey which had been administered. His left leg was badly

crushed, the knee-joint opened, and the laceration extending to the middle of the thigh. The right ankle was crushed, the joint destroyed, and the soft parts torn nearly to the middle of the leg. The patient being etherized, amputation was performed through the upper third of the left thigh by the modified circular operation, to wit, with oval skin flaps and a circular division of the muscles. The femoral artery and vein were secured by one acupressure needle applied after Prof. Simpson's third method, and no other vessel required attention.

The right leg was then amputated at its middle by the ordinary circular method, two ligatures applied, and both stumps closed with lead sutures and dressed with laudanum fomentations.

Although the pulse had risen under the administration of ether, the patient did not fairly react, and in spite of vigorous stimulation, applied both without and within, died in about three hours.

CASE III. *Double knee-joint amputation for railroad injury; acupressure by modifications of the third method of Simpson and of the Aberdeen method.*—Patrick Dailey, an Irishman, 35 years of age, a labourer, was brought to the hospital on the evening of January 13, 1866, by a policeman who had found him lying in an intoxicated condition upon the track of the Germantown Passenger Railway, where he had been run over by a car about half an hour previously. He was cold and pulseless when admitted, but when I saw him, after midnight, had become quite warm, though his pulse was still very weak. He had sustained compound comminuted fractures of both bones of both legs, the laceration on the right side extending about two inches higher than on the left. There was considerable bloody oozing from the left leg.

Ether having been administered, and a tourniquet carefully applied to either thigh, amputation through the knee-joint was performed by the antero-posterior flap method, first upon the right and immediately afterwards on the left side. On account of the greater extent of laceration in the right leg, the flaps were necessarily somewhat scanty upon this side, and the patella and the condyles of the femur were accordingly removed, being allowed to remain on the left side where the flaps were abundantly long. Three vessels were secured by acupressure in either stump, by the modifications of the loop and twist methods described by Prof. Pirrie. (See No. of this Journal for October, 1865, p. 533) In these modifications long pins are substituted for the threaded needles of Prof. Simpson, with the advantages of easier introduction, easier withdrawal (the pin heads remaining without the wound), and the avoidance of a complicated system of wires projecting from the stump.

All hemorrhage having ceased, the stumps were closed and dressed in the same way as in the preceding case, and directions given for the care of the patient through the remainder of the night.

As in the preceding case, however, though this patient improved for a time, he subsequently sank, and died the next day, eight hours after the operation and twelve from the time of the accident.

CASE IV. *Partial amputation of the hand for a factory accident; acupressure; chills and the formation of diffused abscesses of the forearm; secondary amputation above the elbow; acupressure; death on the third day from secondary hemorrhage.*—Wm. McMulligan, an Irishman, 50 years of age, a factory-hand, was admitted February 22, 1866, having

had his right hand injured that morning in the machinery of the factory where he worked. I saw him two hours after his admission, and found it necessary to remove the thumb with its metacarpal bone, the metacarpal bone of the forefinger, with the trapezium and trapezoid. Five acupressure needles were employed to arrest the hemorrhage, three by the Aberdeen or twist method, which I prefer when it can be used, and two by the third method of Prof. Simpson, or that with the metallic loop.

The edges of the wound were then approximated with the lead suture, a laudanum fomentation applied, and the arm placed at rest upon an appropriate splint. There was considerable oozing from the wound during the next twenty-four hours, but not, perhaps, more than should have been expected from the nature and extent of the incisions. All the needles were removed after forty-eight hours without any difficulty and without the slightest bleeding. The flaps sloughed, the arm became much inflamed, vesications formed over the wrist, and finally large abscesses upon the ulnar side of the forearm, opening the wrist-joint, laying bare the lower half of the ulna, and extending to and around the elbow. A slough had also formed from pressure over the internal condyle of the humerus. The patient's constitution was feeble, his appearance indicating at least ten years greater age than he confessed, and the disturbance of his general health was commensurate with the unfortunate progress of his local affection. Decided rigors, several times repeated, followed by febrile reaction and profuse sweating, a furred tongue, and disordered bowels, with gradual emaciation, proclaimed but too surely that nature would not be able to support the burden that was thrown upon her.

On the 15th of March, therefore, three weeks from his entrance into the hospital, the original wound having now assumed a healthy appearance, and the destructive action in the forearm having evidently reached its limit, amputation was performed immediately above the elbow, a single flap, principally composed of integument, being obtained from the anterior and outer surface of the forearm.

The brachial artery was secured by a long pin applied by the twist or Aberdeen method, to which a wire loop was afterwards added for additional security; thus combining the two methods especially recommended by Prof. Pirrie. Six other vessels were secured by threaded needles; three by the twist method, and three by the ordinary loop method as previously described.

The stump was then dressed in the usual way, and the patient replaced in his bed. During the next two days he became exceedingly exhausted, so as to require very liberal stimulation.

After 48 hours I dressed the stump, which looked well, and removed the needles from five of the smaller arteries. During the whole of this day the patient improved rapidly, until half-past nine in the evening, when a sudden gush of hemorrhage took place, and before the house surgeon could reach him he expired. The amount of blood lost was estimated at not less than a pint. Dissection of the stump showed that the flap was adherent to the face of the stump throughout, except at the position of the brachial artery, where was a loose clot of recent formation. The pin and loop by which the artery was compressed were undisturbed from their situation as when first applied. The artery when dissected out presented no ulceration above or around the seat of acupressure. It contained no clot, or at most but a filamentous rudiment of a clot.

CASE V. *Excision of a scirrhous breast; acupressure; recovery.*—E. R., a widow, 64 years of age, was admitted to the Episcopal Hospital, February 13th, 1866, for the removal of a scirrhus of the right breast. The following history of her case previous to admission is taken from notes made at the bedside of the patient by Dr. H. M. Howe, the house surgeon,

"She has had no children; she says that both her father and mother were healthy, and she does not know of any of her ancestors having had cancer. She first noticed her present trouble about four years ago; it began as a small tumour just below the right mamma, and for some time remained nearly constant in size, though slowly increasing and encroaching upon the mammary gland. Having once attacked the gland, it grew with great rapidity, and has enlarged more within the past three months than during all the time of its previous existence. About four months ago she put herself under the care of an "Indian herb doctor," who by his applications caused the tumour to ulcerate. She has enjoyed good health hitherto, sleeps well, and has a tolerably good appetite, and is in every respect in a suitable condition for an operation."

The day after her admission, the patient being etherized, I proceeded to the removal of the tumour in the usual way, by elliptic incisions embracing the nipple and the ulcerated surface. The scirrhous mass was found to have very deep adhesions, involving the pectoral muscle and subjacent tissues, and in removing all the diseased structure the cartilages of several ribs were exposed to view.

Four vessels were secured by acupressure needles, applied by the Aberdeen or "twist" method, and the edges of the wound approximated by lead sutures and supported by broad strips of adhesive plaster. A compress of dry lint and charpie, and an appropriate bandage completed the dressing.

Forty-eight hours afterwards the needles were removed, and the wound found to have united for about half its length by the "first intention." At one point where the tension of the flaps had been greatest, the wound was red and inflamed. A small slough subsequently formed at this place, its formation being accompanied by considerable fever and delirium. This slough separated on the sixth day, and from that time her progress towards recovery was uninterrupted. She was discharged, *cured*, April 13th, 1866, having been in hospital fifty-nine days.

Remarks.—The above five cases are all in which I have so far employed acupressure; although I attempted its use in a case of excision of the shaft of the radius, reported in another part of this paper, in which the bleeding tissues were so dense that the small needles, used by the second or third methods of Simpson, could not be forced through them, while the vessels which bled were so numerous as to forbid the employment of the large pins used in Simpson's first method or in Prof. Pirrie's modifications. In that case I applied eleven silk ligatures without having any reason to regret their use.

It will be observed that I have not in any case employed the "natural wound-lute" suggested by Prof. Simpson as an accompaniment to acupressure, or in other words, that I have not left stumps or wounds uncovered and exposed to the air. Several years ago I had the opportunity of seeing this mode of treatment thoroughly tried, and it resulted in so many

inflamed wounds and sloughing stumps, that I have never been disposed to employ it in my own practice. Nor have I allowed stumps to remain open until the cessation of all serous oozing, for the reason that the flaps or lips of a wound become extremely sensitive a short time after an operation, and I therefore think it better to complete the entire dressing before the patient has recovered from the state of anæsthesia into which he has been plunged. I honestly believe that I have seen as much suffering caused by the introduction of sutures a few hours after the effect of an anæsthetic has passed off, as would have been produced had the amputation been performed in the first instance without anæsthesia having been induced.

With regard to acupressure itself, I have no hesitation in saying that I consider it a very valuable addition to our means of controlling hemorrhage. With a little practice it can be applied, especially by the Aberdeen or "twist" method, more quickly than the ligature, and presents the great advantage that the surgeon can use it without an assistant. Hence it would be well for every medical man to carry a few acupressure pins in his pocket case, as he may be called upon to arrest hemorrhage where no competent assistant can be obtained. In a hospital, however, or where the surgeon has all the appliances he may need, I do not, I must confess, see that acupressure presents any advantage over deligation. I have frequently ligated large veins without any evil consequences ensuing, and I have never known any harm to result even when it was supposed that the ligature might have included some nervous filaments. I have lost one case of amputation (reported above) from secondary hemorrhage after acupressure, and I have lost but one from hemorrhage after the use of the ligature. I have never seen in my own practice, or in that of others, absolute primary union of a stump after either deligation or acupressure; but union by adhesion I expect in every case of amputation, where the flaps are healthy and of sufficient length. I have never seen any evil which could be fairly attributed to the employment of ligatures, while I have seen undue irritation and swelling temporarily produced by the use of acupressure.

In fact, I am disposed to think that those gentlemen who praise acupressure in such glowing terms attribute, as is apt to be done with any novelty, the good result of their cases too much to acupressure alone, when they should rather place it to the credit of their own surgical skill and the good nursing and other favourable circumstances which their patients have enjoyed. Before I began the use of acupressure, one of my professional friends, who was its ardent advocate, told me with an air of triumph that he had then in his care a patient with amputation of the thigh, who, thanks to acupressure, had been able to sit up on the *nineteenth* day: I admitted that this was a good result, but mentioned at the same time that I was attending a patient with amputated thigh who, though I had used the clumsy method of deligation, had been able to sit up on the *eighteenth* day.

II. *Four Cases of Fractured Skull treated at the Episcopal Hospital during the Autumn of* 1865.

CASE I. *Fracture at base of skull; death on fourth day; autopsy.* [From Dr. Bodine's notes].—Joseph K. Alderfer, 25 years of age, unmarried, a returned soldier, and a native of Pennsylvania, was admitted on Thursday, August 31st, 1865, at about ten o'clock in the morning. He stated that he had fallen an hour or two previously from a loaded wagon which he was driving, and which was overturned at the time of his fall. On examination there was found a great deal of ecchymosis of the left orbit. Blood was flowing from his nose and mouth, and a large quantity had been swallowed and was afterwards vomited. He complained of pain in his head, and in his left leg, which presented a fracture in the upper part of the fibula. His pulse was sixty-four, his respiration somewhat laboured, and his right pupil slightly contracted. He was restless, but rational.

His leg was wrapped in pillows, and ice applied to his head. He was ordered a teacupful of milk every four hours. The next day he complained much of headache, was very restless, and slightly delirious; pulse 68.

Sept. 2d. In the morning he was rational again, but still very restless; pulse 72. In the evening his pulse rose to 112, with great heat of surface; respirations 32 in the minute; very restless and delirious, though not noisy; pupils of both eyes contracted.

3d, 4 A. M. Skin very hot; pulse 120; respirations stertorous. 8.30 A. M., pulse 130; respirations 12 in the minute. Died at 9.30 A. M. At the *autopsy* the membranes of the brain were found very much congested, and contained about four fluidounces of reddened serum. There was also slight congestion of the brain and lateral ventricles. A fracture was found at the base of the skull arising in the left greater wing of the sphenoid bone, passing through the olivary process and right greater wing of the sphenoid, and ending in the petrous portion of the right temporal bone. There was also found a comminuted fracture of the upper end of the left fibula.

CASE II. *Fracture at base of skull, compound fracture of both jaws; recovery.* [From Dr. Bodine's notes.]—Gottlieb Jehle, a German, 21 years of age, and by occupation a gardener, was admitted to the Episcopal Hospital on Sept. 8, 1865, at about half past four in the morning, having both his upper and lower jaw broken by a kick from a horse, received the previous evening. He had been stunned by the blow, and had been carried into a house where he lay insensible for about four hours; he then, it was stated, got up, walked out of the house, came back, and relapsed into unconsciousness. He was then brought to the hospital, where he remained in a state of insensibility until about half past eight in the morning. The incisor teeth and the corresponding alveolar process of the upper jaw had been carried away by the injury, and the lower jaw was broken into several fragments. He was unable to lie down in bed; he swallowed with difficulty, and his respiration was somewhat laboured.

The history of his case prior to admission was not obtained till afterwards, and, though he seemed dull and heavy, his state did not excite any suspicion of a more serious injury than had at first been recognized. On the night of September 11th, however, he fell from his sitting posture in bed to the floor, and when raised was found to be in a state of complete stupor. At my visit the next day I found that he could not be roused; his breathing was stertorous, his pulse full and slow, and his head flushed

and hot. He had complete hemiplegia of the left side. He was ordered an opening enema; to have ice to the head, and to be put on milk diet. R.—Hydr. chlor. mit. gr. $\frac{1}{4}$, opii gr. $\frac{1}{6}$, every third hour.

On the two following days the paralysis began to pass off; his mental faculties were now decidedly impaired.

Sept. 15. Complete ptosis on the left side; this also gradually passed off with his paralysis, and, more slowly, the impairment of his mental condition.

The pills of calomel and opium were stopped on September 19th, and the iodide of potassium substituted in ten grain doses thrice daily. His convalescence may be considered to have fairly begun from this time, and he was discharged, cured, November 3, 1865, having been in the hospital fifty-six days.

An intercurrent attack of facial erysipelas was treated by alcoholic stimulants and the local application of cotton wool.

This patient reported himself at the hospital on February 22, 1866, fat and apparently hearty. He had, however, still slight dizziness, and his vision on the right side of a vertical plane was totally absent. His jaw, which had been treated by means of a "Barton's bandage," was firmly united, and with much less deformity than could have been anticipated.

I have elsewhere expressed the opinion that there was no absolutely pathognomonic symptom of fracture at the base of the skull, and that the diagnosis could not be made certain during life; yet, though the symptoms in this case might possibly have been produced by cerebral injury without fracture, I think the balance of probability leans strongly in favour of the existence of the latter lesion.

CASE III. *Compound depressed fracture of frontal bone, with exposure of anterior lobe of brain; recovery.* [From notes of Dr. J. L. Bodine.]—James Massey, an Englishman, 39 years of age, married, a saw-grinder by occupation, was admitted to the Episcopal Hospital at about 11½ A. M., on September 15, 1865, suffering from a compound depressed fracture of the frontal bone, which had been produced that morning by the bursting of a grindstone at a neighbouring saw-factory. He had been sitting before the grindstone on an iron-bound "horse," by a blow from the end of which his injury was caused. I happened to be in the hospital at the time of his admission, and found him to be entirely unconscious, and with profoundly stertorous respiration. The external wound was branched, forming two sides of an irregular triangle, each branch being about an inch and a half in extent. The fracture was comminuted and depressed, involving the entire thickness of the skull. Two loose pieces of bone were removed, and the depressed portion gently elevated; this procedure instantly diminished the stertor of his respiration, and the patient turned over on his side. The cerebral mass could be seen pulsating through the wound, and the membranes were lacerated, a small quantity of brain matter exuding through the opening in the skull. The soft parts were adjusted with adhesive strips, and ice applied to his head; he was ordered to be kept very quiet, and to be put upon milk diet. His pulse beat fifty-two strokes in the minute; his eyelids could not be opened, so that the condition of his pupils could not be ascertained.

Sept. 16. He was pretty quiet during the preceding night; he was now conscious and able to recognize the members of his family. The

wound was dressed; he had been kept very quiet and had had no pain. R.—Hydr. chlor. mit. gr. $\frac{1}{4}$, opii gr. $\frac{1}{6}$, every third hour.

17*th*. His condition was very little changed; pulse 56; he was somewhat more restless, and in the latter part of the day his hands had to be tied to prevent him from injuring himself.

18*th*. He was able to open his eyes, and no difference in the pupils was to be seen. The external wound doing well.

22*d*. Pills of calomel and opium stopped, and ten grains of iodide of potassium given three times a day. During his whole treatment this patient's pulse never rose above sixty. From this time he gradually convalesced, showing, however, decided dulness of mind, and complaining of a feeling of weight in the head, but never having been unconscious since the first day. He was discharged, cured, November 26, 1865, having been under treatment seventy-two days.

This patient has reported himself at intervals since his discharge, and is apparently in good health, though indisposed to much exertion, and suffering from frequent headaches and what he calls a feeling of heaviness in his head.

CASE IV. *Extensive fracture of vault of skull, with laceration of the base of the brain from counterstroke: autopsy.* [From Dr. E. W. Watson's notes.]—Michael Sullivan, aged fifty, an Irishman, and by occupation a labourer, was admitted into the Episcopal Hospital on the morning of October 2d, 1865, having fallen a short time previously from the third story window of a dwelling-house. When first seen, he was found to be totally insensible; his respiration was stertorous, and the left side of his scalp contused and puffy; there was marked orbital ecchymosis of the left side, and hemorrhage from the left ear; pulse about 100, and very weak, and his skin bathed in a cold sweat; his lower jaw was dropped, and there was internal strabismus on the right side.

Ice was applied to the head, and stimulants were administered freely, with some little improvement in the pulse, which became stronger and less frequent, while his skin grew warmer and his breathing more natural. The patient at times screamed violently, and was with difficulty kept in bed. The next day he had partially reacted, and was ordered calomel and opium, with milk diet, as in the previous cases. Reaction, however, did not continue, and on the morning of October 4th the pulse became again weak and fluttering, and the breathing slow and laboured. The patient vomited his medicines and food; his skin became cold and clammy, and death ensued about 10 A. M. of that day.

An autopsy was made five hours after death, with the following results: His scalp was infiltrated with blood, and, when raised, displayed a fracture involving the orbital plate of the frontal bone, with the temporal and sphenoid bones on the left side. The membranes were congested at the seat of fracture, and there was considerable laceration and contusion at the base of the brain on the *right* side, directly opposite the seat of fracture, and apparently produced by the *contre-coup* or counterstroke of the older writers.

Remarks.—The course of treatment pursued in the above instances is that which I am in the habit of adopting in cases of fractured skull. I have not yet seen any reason to modify the views I have elsewhere expressed with regard to trephining, and cannot sum up my opinions as to the treat-

ment of this most serious class of injuries better than by repeating the concluding sentences of a previous paper upon this subject:—

"There is a close analogy, though often forgotten, between trephining and the resection of long bones. In compound fractures of the extremities we extract loose fragments, restore the others as nearly as possible to their proper places ('setting' the fracture), and then trust the case to nature. Just so in compound fracture of the skull, it seems to me, we should content ourselves with removing the detached portions of bone, and restoring the rest, if possible, by the elevator or otherwise, to their proper level, and then withold our hands; conducting the after-treatment upon physiological and rational principles."—*Am. Jour. Med. Sciences*, vol. l. p. 390.

Of course, in a simple fracture I should consider trephining even more improper than if the fracture were compound. The last case recorded above may serve to show how useless the operation would have proved if it had been employed, for the really important injury, and that of which the patient died, was at the base of the brain, at the opposite side from that of fracture. In fact, in the autopsies which I have made or seen in cases of fractured skull, now no inconsiderable number, I cannot recall one in which it appeared that the use of the trephine could have done other than hasten the fatal issue.

III. *Case of Surgical Fever.*

Subperiosteal resection of four inches of the shaft of the radius for an old gunshot wound. Surgical fever; recovery with improved use of arm. [From Dr. Bodine's notes.]—John Carrol, an Irishman, 45 years of age, and unmarried, was admitted to the Episcopal Hospital on the first day of July, 1865, suffering from an old gunshot wound of the forearm, received in one of the battles before Richmond, July 28th, 1864. He had received from the same ball a flesh wound on the side of the trunk. The bones of the forearm (the right) were pronounced to be fractured by the surgeon who examined him on the field, and he was sent to a general hospital for treatment. A piece of bone about an inch in length had been removed by exfoliation before he applied for admission to the Episcopal Hospital.

When he came under my care in the month of August, 1865, his arm presented two openings, one on either side, and both communicating with dead bone; the wrist-joint was stiffened, and the fingers almost immovably extended. The bones of the forearm appeared very much thickened, and the interosseous space obliterated. He had no power of pronation and supination, the arm being fixed in a prone position.

On Friday, Sept. 1st, the patient being under the influence of ether, I made an incision upon the *ulnar* side of the forearm, laying bare the *radius*, which had united after being fractured, in such a way as to completely overlap the ulna. Having stripped off the periosteum on either side, I removed with strong cutting forceps about four inches of the shaft of the radius, which was very much thickened; the ulna was found quite healthy. After breaking one or two acupressure needles in the attempt to pass them through the dense structures involved, eleven ligatures were applied, principally to vessels in the separated periosteum. The wound of incision was then

closed with lead sutures, dressed with lint saturated with laudanum, and the arm confined on an appropriate splint.

The patient slept after the operation, and his pulse in four hours was found to be ninety-six to the minute. He was not able to pass water, and for some days it was drawn off by a catheter at regular intervals. He was ordered to be kept very quiet and to have milk diet.

Sept. 2. Pulse 96; considerable heat of skin; tongue furred. R.—Morph. acetat. gr. j; spt. æth. nitr. ʒij; sacch. alb. ʒj; aquæ camph., liq. ammon. acetat., āā ʒiv. M. Sig. A tablespoonful every three hours. To have an enema in the evening.

3*d.* Pulse 100. The enema not having operated well he was ordered a tablespoonful of castor oil.

4*th.* Sweating profusely; pulse 96; tongue furred. Ordered a wine-glassful of milk punch every four hours; diaphoretic mixture to be stopped.

5*th.* Pulse 96; he has vomited several times since my last visit. R.—Quin. sulph. ʒj, ac. sulph. arom. fʒj, aquæ aurant. flor. fʒiv. M. Sig. A teaspoonful four times daily.

The wound was now dressed with proof spirit. During the ensuing days his tongue became more dry, and his pulse more feeble; and on *Sept.* 9*th* he was ordered ten drops of the oil of turpentine every three hours. On *Sept.* 10*th* he had a chill, followed by high fever and sweating; to get his quinia mixture more frequently, so as to have twelve grains in the twenty-four hours, instead of eight, as before.

11*th.* Nine of the ligatures came away; he was ordered the following every hour, as he loathed the idea of meals, and was constantly nauseated. Whiskey fʒij, lime-water fʒij, milk fʒiij. He had a chill about 5 P. M.

13*th.* The rest of the ligatures came away; there was some tenderness about the wrist-joint, and considerable redness up the arm. Pulse 92; tongue cleaning; nausea continued with occasional vomiting. R.—Acid. sulph. dil. fʒj, tinct. aurant. fʒj, aquæ fʒvij. M. Sig. Tablespoonful thrice daily; to get sixteen grains of quinia in the twenty-four hours, and a double quantity of whiskey with his lime-water and milk.

14*th.* Pulse 98; had a chill in the afternoon. To have twenty grains of quinia in the twenty-four hours.

15*th.* Another chill in the afternoon; pulse 108.

16*th.* Pulse 96; there were distinct red lines extending up the arm; erysipelas had attacked the hand; the tongue had become more dry. The arm to be enveloped in a poultice; a fomentation of permanganate of potassa (ʒj–Oj) applied to the wound; the splint removed, and the arm merely supported on a pillow.

17*th.* Pulse 100; blisters had formed in the hand; tongue dry; had a chill in the night. To get twenty-four grains of quinia in the twenty-four hours.

18*th.* Pulse 100; three abscesses appeared on the back of the hand; there was a universal redness of the arm above the wound.

19*th.* Appearance somewhat improved; arm less inflamed.

20*th.* One abscess had opened of itself, and the two others were evacuated by the knife. The tongue was very dry and rough in the centre, but beginning to moisten at the edges; pulse 108, and feeble; respiration embarrassed; countenance anxious.

23*d.* Three abscesses which had formed in the upper arm were evacuated. Tongue still dry; pulse 100. The weather being extremely warm, it was

ordered that his bed should be carried out to the veranda attached to the ward for a few hours every day.

The daily notes of this case stop here; but, suffice it to say, that from this point his condition assumed a more favourable aspect. His wound put on a healthy appearance, his appetite returned, and he slowly, but surely, entered upon convalescence. He was discharged, cured, Dec. 13, 1865, 104 days after the date of resection, with an arm which, though of course weakened somewhat by the loss of bone, and stiff from long disuse, was yet of decidedly more value to him than before the operation.

Remarks.—The above history presents a case of "surgical fever," in a severe form, brought to a successful termination by what appears to me the most rational mode of treatment. I do not believe that any specific has yet been found, or is likely soon to be found, for this affection in any of its varieties. The drug which seemed most useful in this case was quinia, and I have always found advantage in its use with patients who suffered from repeated rigors, even if there were no suspicion of any malarious taint. It should be given in sufficiently large doses to impress decidedly the nervous system, and in my experience acts best in solution with some preparation of sulphuric acid. But more important than any drug is the supplying of easily assimilated food in small quantities at short intervals, and I know of nothing better than the combination of milk and lime-water with brandy or whiskey in teacupful doses every hour day and night.

Although the periosteum was entirely preserved in this case, there was no apparent reproduction of bone up to the date of the patient's discharge; yet the subperiosteal character of the operation subserved two useful ends: first, by avoiding the division of any muscular or tendinous attachments, and of any vessels or nerves of considerable size, and, secondly, by affording a much thicker and firmer cicatrix than could in any other way have been obtained.

IV. *Cases of Fracture of the Upper Half of the Humerus treated without Splints.*

CASE I. Robert Gillies, a Scotchman, 75 years of age, and by occupation a weaver, was admitted to the Episcopal Hospital on the 12th of August, 1865, suffering from a somewhat oblique fracture about the junction of the upper and middle thirds of the humerus. There was considerable contusion of the soft parts, and the skin had the loose inelastic feel often observed in old persons, and which so certainly indicates a liability to excoriation. The fracture was treated in the following manner: reduction having been effected by manual extension in a vertical line (the patient standing) a folded towel was placed in the axilla and a roller bandage was smoothly applied to the limb from below upwards, so as to reach a little above the line of fracture; the forearm being then flexed upon the arm at an angle of about 45 degrees, and the hand being in a position midway between pronation and supination, the limb was laid upon the anterior surface of the chest, so that the fingers reached to the clavicle of the opposite side; the arm was then secured in its position by the bandage known as the third roller of Desault (as used by that surgeon for fractured clavicle), aided by additional turns of the roller binding the arm firmly to the chest. In

applying the Desault's bandage, care was exercised merely to support the elbow without forcing it upwards. The patient was then allowed to be about the ward, the dressing being renewed every six or seven days, according as any portion became disarranged. After ten days or two weeks, a small pasteboard cap was applied over the seat of fracture. He was discharged, *cured*, October 10th, having been in the hospital fifty-nine days.

CASE II. William Patten, aged 74, a plasterer, was admitted to the Hospital on August 13th, the next day to that of the former patient's entrance, with a fracture of the surgical neck of the humerus, produced in a similar manner, but of the opposite side of the body. The treatment adopted was the same, and the patient was discharged, *cured*, on the same day, October 10th, having been under treatment fifty-eight days.

CASE III. George Weller, a school boy, 9 years of age, was admitted March 5th, 1866, with a fracture of the surgical neck of the right humerus, caused by a fall (as in the previous cases), and accompanied with enormous tumefaction and ecchymosis. The treatment adopted was the same as in the other cases, except that the preliminary spiral bandage and the pasteboard cap were omitted, and that the dressing was rendered additionally secure by the use of a few broad strips of adhesive plaster.

In this case the dressing had to be renewed but once, the cure being completed, and all bandages removed after eighteen days.

Remarks.—This method of treating fractures in the upper part of the humerus was taught me by that most excellent surgeon, Dr. Geo. W. Norris, formerly Senior Surgeon to the Pennsylvania Hospital. I find it but slightly noticed, or more frequently omitted altogether, in standard works of the day, and must, therefore, conclude that, although far from new, it is not known or not used by the large majority of practitioners. And yet, it seems to me that an unprejudiced trial is all that is requisite to show its superiority over the complicated apparatus of long and short splints and pads now generally employed. I have repeatedly in this way given immediate comfort to patients whom I have found suffering and complaining greatly of the combined inflictions of a fractured humerus and the clumsy appliances generally used in its treatment. The advantages which I would claim for the practice here described are, an equally good result to that usually obtained, occupying as short or even a shorter time for treatment, much greater comfort to the patient, and much less trouble to the surgeon. The degree of flexion of the forearm prevents that anterior angular displacement which so often occurs with the use of the rectangular splint, while it is much easier for the patient than the position of extreme extension suggested by Hamilton. In the use of splints, excoriation can only be prevented by frequent renewal of the dressing, while the bandages here recommended, if carefully and properly applied, may be allowed to remain a week without injury to the most delicate skin.

V. *Two Cases of Acute Epididymitis treated by Smith's Method of Puncturing the Testis.*

CASE I. John Morey, 35 years of age, married, a seaman, entered the

Episcopal Hospital March 23, 1865, suffering from acute inflammation of the epididymis (gonorrhœal in its origin) of but short duration. I found him in bed, with his knees drawn up and his thighs separated, his very attitude indicating the pain he experienced. Having ascertained the position of the most tender point, I plunged into it a sharp, narrow, straight bistoury to the distance of about one inch, withdrawing it so as to leave an incision of about a fourth of an inch in length. A few drops of blood followed the withdrawal of the knife, and when the patient had recovered from the surprise into which my unexpected procedure had thrown him, he declared that he felt already greatly relieved by the operation. He was ordered to stay in bed for a few days, and to apply a simple evaporating lotion. The next day he was entirely free from pain, and the swollen organ quickly resumed its normal dimensions, the patient being discharged, *cured*, April 7th, having been in hospital fifteen days.

CASE II. Wm. Davis, seaman, 19 years of age, was admitted February 7, 1866, suffering from gonorrhœa, and consequent acute epididymitis. He had had the part leeched before entering the hospital, with but slight relief. The testis was punctured as in the preceding case, with the same speedy disappearance of pain; and, contrary to the usually received opinion, the urethral discharge diminished as the tumefaction of the testis disappeared. The epididymitis was entirely gone in ten days, and the patient was discharged *cured* of both affections at the end of three weeks.

Remarks.—No complication of gonorrhœa is more dreaded both by patient and surgeon than "swelled testicle," orchitis, or, as it should more correctly be termed, inflammation of the epididymis. And this is not surprising in view of the heroic treatment, leeching, purging, strapping, etc., usually adopted. My attention was first directed to the very simple and satisfactory practice here recommended, by a paper by Mr. Henry Smith, of King's College Hospital. (See this Journal October, 1864, p. 535.) The great relief from pain is, I imagine, due to the diminished tension upon the inflamed testis by the division of its dense fibrous envelope. The principle is the same as that upon which we act in incising painful felons, before the occurrence of suppuration, and in the treatment of painful nodes, by subcutaneous or other division.

VI. *Report of the Dissection of a Case of Lumbar Abscess, in which Death was directly caused by Profuse Arterial Hemorrhage.*

The patient was a young man who had been affected with the disease for a considerable time. When he came under my care, in January, 1866, there was a small fistulous opening on the anterior surface of the left thigh, about two inches below Poupart's ligament. From this was discharged a large amount of extremely fetid pus, probably not less than a pint in the twenty-four hours. He stated that by pressure on the left lumbar region the flow from this orifice could be increased. The patient became gradually weaker, until the morning of March 20, 1866, when profuse arterial bleeding took place from the opening referred to. Although pressure by means of a clamp tourniquet was immediately employed, he rapidly sank, and died at 10.40 A. M., about two and a half hours after the occurrence of the hemorrhage.

Dissection showed the existence of an immense abscess, arising from the

neighbourhood of the fourth lumbar vertebra, which was carious, and passing downwards, both before and behind the spinal column, laying bare the sacro-iliac symphysis, the promontory of the sacrum, and the sacro-iliac and sacro-ischiatic notches, distending the gluteal region, and passing behind and to the outside of the great trochanter and the neck of the thigh bone to terminate in the fistulous track in the front part of the thigh. Injection of the internal iliac artery showed the hemorrhage to have come from an ulceration of a branch of the left gluteal—probably one of the lateral sacral arteries of that side.

VII. *Cases of Urethral Rupture, or Stricture.*

CASE I. *Ruptured urethra.*—Clarence Masterson, an Irishman, 50 years of age, married, and by occupation a labourer, was admitted to the Episcopal Hospital on the morning of August 28, 1865, having been injured by falling astride of a joist in a new building where he was at work. He had lost a good deal of blood, and was still bleeding freely from the urethra when I saw him, a few minutes after his admission; he had not, however, made any attempt to urinate since his fall. I immediately proceeded to the introduction of a full-sized catheter, which I fortunately succeeded in passing with but little resistance, and without inflicting much pain upon the patient. The catheter was then secured in the bladder, thus preventing any further hemorrhage, and an evaporating lotion applied to the already swollen scrotum and perineum. The catheter was retained in the bladder for four or five days, not a single unfavourable symptom having been manifested, and the patient was discharged, *cured*, on September 6th, having been under treatment but nine days.

CASE II. *Supposed impermeable stricture of the urethra; cure by dilatation.*—Wm. J. Claghorn, a merchant, 45 years of age, was admitted to the Episcopal Hospital November 27, 1865, suffering from stricture of traumatic origin and of several years' duration. He suffered also from phimosis, of which he was relieved by an operation, previously to coming under my care, in the month of January, 1866. He had never had an instrument introduced into his bladder (though repeated attempts had been made to pass a catheter), and his suffering and discomfort were so great that he was willing to submit to any operation for his relief. On the 9th or 10th of January, the patient being thoroughly etherized, after several trials I finally succeeded in passing a small metallic bougie, which having been allowed to remain for a few minutes, was easily replaced by a larger one. By continuing this procedure I was at last enabled to introduce a full-sized catheter, which was then secured in the bladder.

As every previous attempt at catheterization had been followed by severe rigors and general constitutional disturbance, I was agreeably disappointed the next day to find my patient quite easy, and greatly delighted with the results of my manipulation. After a few days the catheter was removed, being introduced at stated intervals to evacuate his bladder. Upon one occasion, however, in attempting to pass water without the instrument, he suddenly felt something give way (as he expressed it), and then had a sensation as of urine flowing, though none escaped from the urethra. The house surgeon, Dr. H. M. Howe, very properly ordered him to bed, and at once introduced a catheter which was allowed to remain. When I saw him the next day, he complained of great tenderness of the hypogastrium,

lay with his knees drawn up, and in fact presented the usual symptoms of acute localized peritonitis.

Under appropriate treatment this rather alarming complication disappeared, and the patient, having been taught to use the catheter himself, and instructed to pass it from time to time, so as to prevent the recurrence of his trouble, left the hospital in good health and spirits, and able to pass a full stream of water without the slightest pain or inconvenience, on the 16th of February, eighty-one days from his entrance into the hospital, but less than six weeks from the date when an instrument first entered his bladder.

CASE III. *Traumatic stricture complicated with perineal fistula; treatment by external division.*—Edward Langley, an Englishman, thirty years of age, was admitted to the surgical ward of the Episcopal Hospital, March 19, 1866, suffering from a stricture of the urethra of rather more than three years' standing, together with a perineal fistula, which had existed about six months. His disease, as in the case of Masterson above reported, had originated from his falling astride of a joist in a new building. He attributed the abscess which had resulted in the perineal fistula to rough handling in the introduction of instruments. Since the existence of the fistula, he stated that it had been found impossible to get a catheter fairly into the bladder.

At a preliminary examination, the day of his admission, I found the urethra excessively irritable, and a slight stricture anterior to the fistula, in addition to the more serious one behind. He passed his urine in driblets three times in an hour, and the act of urinating was accompanied with great pain. Nearly all his urine escaped through the fistula. His general health had already begun to suffer, and he was anxious to obtain relief in any way that should be suggested.

His urine was examined by the house-surgeon Dr. H. M. Howe, and found to contain phosphates, urates, albumen, and epithelial casts, with a small amount of pus, probably from the fistula, which was inflamed and suppurating.

On the twenty-first of March the patient was thoroughly etherized, when I found that I could get an instrument through the anterior stricture, but that it could not be passed through the principal obstruction, situated at the junction of the spongy and membranous portions of the urethra, without using more force than either myself or my colleagues deemed advisable. I therefore caused the patient to be brought into the usual lithotomy position, and introduced a grooved staff well into the grasp of the stricture, then confiding the staff to my colleague, Dr. Forbes, who held it firmly in the median line of the patient's body. A few strokes with a sharp bistoury sufficed to open the urethra, exposing the staff, and thus dividing the anterior portion of the stricture. Then taking the staff in my right hand, and assisting it with the forefinger of my left, I succeeded in rocking it without any difficulty into the bladder. A single stroke of the knife now divided the remainder of the stricture, and the operation was completed. A grooved director was passed from the wound into the bladder, serving after the removal of the staff to guide the introduction of a medium sized silver catheter, which was then secured in its place, and the patient restored to bed. When the effects of the anæsthetic were passing off, a full dose of morphia was administered.

The next day the patient was easy, with the exception of slight abdomi-

nal cramps which soon disappeared, and on the third day a No. 10 gum catheter was substituted for the smaller metallic instrument at first used.

On the eighth day he was allowed to pass water without an instrument, but urine still escaping through the wound, the catheter was replaced. The patient was entirely free from suffering, and declared that he had not felt so well for years. At this date (April 23d) he is able to pass water in a full stream *per vias naturales*, the perineal wound being almost entirely healed. He has gained flesh and colour, and his urethra admits a full-sized instrument without difficulty and without the infliction of pain.

Remarks.—These three cases are presented as aptly illustrating some most important points in the treatment of urethral injuries.

The happy result in the first case is to be attributed entirely to the fact that no attempt had been made to pass water until after the introduction of the catheter. When such an attempt is made after rupture of the urethra, urinary extravasation is almost sure to occur, and will produce the most serious if not fatal consequences. Hence in such a case the surgeon's first thought should be to get an instrument into the bladder, and if found impossible in the ordinary way, it would be better to lay the urethra freely open by incision in the perineum, than to run any risk by waiting for the action of warm baths, fomentations, or anodynes. A most instructive case of ruptured urethra is narrated by Mr. Fletcher, of Manchester, in the *Association Medical Journal* for Sept. 21, 1855, where, although the patient was seen within fifteen minutes from the time he was hurt, urine had already been passed, extravasation had taken place, and in spite of the most careful treatment, death ensued on the seventh day.[1]

The second case exemplifies what I think is without doubt the best mode of treating stricture, whether inflammatory or traumatic, where such treatment is possible. I have known death follow forced catheterization, and the most serious constitutional disturbance attend rapid urethral dilatation. But the more or less gradual dilatation by the employment of bougies of various sizes is so simple, so safe, and, withal, so satisfactory, that it seems hard to understand why any other treatment should be desired.

What was the cause of the intercurrent peritonitis in this case, I am unable to say. The patient's own description of his sensations would have inclined me to suppose that rupture and slight extravasation had taken place; but his rapid recovery, and subsequent freedom from unfavourable symptoms, would appear to render it more probable that the serous covering of the bladder alone was affected, by transmitted irritation from that organ.

The third case above reported was one in which I believe that even had an instrument reached the bladder, cure by dilatation would have been im-

[1] The necessity for promptly laying the urethra open by an incision in the perineum, in such cases as above, is most clearly demonstrated in an important paper by the editor of this Journal, in the number for February, 1837 (Vol. XIX.), to which the attention of the reader is respectfully invited.

possible. The urethra was so sensitive, and the stricture and surrounding tissues so dense and cartilaginous in structure, that I believe no treatment but that adopted could have been productive of lasting benefit.

I cannot better end these observations than by quoting some of the conclusions stated by Mr. Bryant, in his paper in the fourth volume of Guy's Hospital Reports, 3d series, pp. 79–80.

"In cases of organic stricture when the passage of a catheter is possible and not difficult; where it does not produce either any injurious or painful constitutional or local disturbance, and where, after dilatation of the stricture, an occasional passage only of the instrument is required to maintain an open channel, no other surgical means can be called for."

But "cases of stricture do occur occasionally, which are so exquisitely sensitive, and in which the passage of a catheter, however skilfully performed, is followed by such severe constitutional and local disturbance, as to produce more harm than good; and *others*, which are relieved by means of a catheter, and are even fully dilated, but which have a tendency to contract again immediately upon the omission of the treatment; in such cases the operation of 'external division' is most valuable."

225 S. SIXTH STREET, PHILADELPHIA, April, 1856.

ART. VI.—*Twelve Cases of Gunshot Injuries of the Head.* By W. P. MOON, M. D., formerly Executive Officer of Mower U. S. A. Hospital, Philadelphia, Pa.

IN reporting the following cases of gunshot injuries of the head, I wish to contribute my mite to the vast amount of material which has been collected as one of the results of the great struggle through which we have just passed.

Some of them will demonstrate, I trust, that the opinion so emphatically indorsed by most of the highest authorities is well founded; that surgical interference, even by the use of the trephine, in fractures of the cranium, are not only judicious, but imperatively demanded in some cases, and that an excision of the bones of the head is not so uniformly dangerous as some have supposed. Several other cases, equally as interesting, and some of them very satisfactory cures, came under our observation, but we failed to get notes of them.

One case I remember being under our care for a few days after the patient had recovered, with a good physical constitution but shattered mind, where a musket ball had passed through the brain. We were unable to obtain a very reliable account from him, but a history of his case came with him, which left no doubt as to the injury. I failed to save a copy and history of this, one of the most intensely interesting cases under our observation.

CASE I. D. B., private Co E, 100th Penna. Vols, 33 years of age, an American, was admitted to Mower U. S. A. Hospital, July 19, 1864, for what had the appearance of a slight scalp wound over the left temporal region, said to have been received June 17th, at Petersburg, Va. The morning following his admission, while going the rounds in visiting newly entered patients, I noticed this man, and found him in the corridor, outside of his ward. He had a peculiar gaze, and could not give a ready and intelligent account of the time and circumstances of injury. There was hesitancy in his replies, and, at times, a want of comprehension when spoken to. The wound had taken on no unhealthy action externally, but upon examination it was found to be more serious than a superficial observation might indicate. There was found to be fracture at the central portion and superior border of temporal ridge of the left parietal bone.

As there appeared, as yet, to be no serious lesion or indications for interference, the patient was put to bed with strict injunctions that he should be kept there, and closely watched for the development of head symptoms. Alterative doses of calomel were given, light diet, absence of all excitement, and cold water dressings to the wound, which was carried out under the careful management of Dr. Hanley, in whose ward the patient belonged.

July 29. Patient became unconscious, to which of late there had been a growing tendency, with decided indications of compression; pupils dilated; respiration laboured; pulse slow and soft, with tendency to coma. It was with difficulty he could be made to comprehend, and his answers were very unsatisfactory and incoherent.

Upon consultation with Dr. Agnew, consulting surgeon to that part of the house, it was decided to trephine, which was done on the following morning. A crucial incision was made at the seat of injury, and upon exposure of the cranium and removal of a section of the external table, the inner was found depressed, and resting firmly against the membranes, but had not penetrated them. Upon removing the portions of inner fracture, a small abscess was found in process of formation, outside of the membranes, at the point of depression. The parts were adjusted, and the patient allowed to come from under the influence of the anæsthetic, when his entire consciousness and intelligence returned *on the instant*. Cold water dressings were continued, and absolute recumbence with the head elevated, and light diet.

31*st*. Patient quite feeble, with slow, soft pulse; bowels loose. Slightly tonic and anodyne treatment advised.

Aug. 1. Much improvement in every respect; wound healing kindly, and patient bright and cheerful, with diarrhœa checked, and appetite returning.

From this time the case progressed favourably, and proved to be one of those cases which tend to convince us that a timely interference unmistakably tends to save life. No untoward symptom was developed; and in the course of two weeks the patient was allowed to go about the ward. An occasional pain in the left side of the head was complained of for the first few weeks after he got out, and was exposed to the heat of the sun; but even this passed away as convalescence became more fully established.

Sept. 22. He was considered sufficiently well to be discharged, and go home.

CASE II. J. L., private Co. — 9th N. Y. Indpt. Bat., æt. 24, American, was admitted to "Mower," June 29, 1864, for gunshot fracture of right side

of frontal bone, caused by a piece of shell striking the forehead half an inch above the superciliary ridge. The fracture extended through the frontal bone into the orbital plate in the region of the orbital notch. The shell was supposed to have made a glancing blow, and no portion of it to have entered the head. Wound received at Spottsylvania, Va., May 12, 1864. Patient, a large muscular man, was knocked insensible, and was carried off the field.

July 1. Head carefully examined, and as the case seemed to be progressing favourably, with necrosis of the fractured portions going on, no interference was deemed necessary, but rest, quiet, and all avoidance of excitement, light diet, with a light cerate dressing to the wound, were enjoined; the case to be carefully watched, which was done by Dr. Lapsley, under whose care this man was at the time. General health very good; faculties bright, and pulse quite natural. Wound in healthy condition.

26*th*. Nearly a month after admission, patient had become in a convalescent condition, and had been doing light duty in the ward, the wound remaining open, and discharging a small amount of *bone* pus, both above and below the superciliary ridge. The case had been examined from time to time, but no bone entirely detached had been discovered. About this time the man had got a pass, and while out indulged in a drunken bout. The day following, head symptoms began to be developed, with indications of inflammation of the brain; restlessness, with pain in the head at the seat of injury, loss of appetite, pulse variable, pupils dilated, and not readily susceptible. In a day or two followed a tendency to lassitude, stupor, with mind wandering. The face and orbital region began to present an inflamed and tumefied appearance. Necrosis was still in progress, but no detached portions were yet detected. It was determined upon consultation to remove that portion of bone which was deprived of pericranium, and sloughing, as the patient's health was being compromised by the existing inflammation and symptoms of compression.

Assisted by Dr. Morton and other gentlemen of the medical staff, the operation was performed by making a curvilinear flap sufficient to expose the bone to the extent of two inches at the point of injury. It was unnecessary to use the trephine, as both tables were found fractured to such an amount that the portions could be removed by means of bone forceps and an elevator. After removing a fragment of the external plate, an inch square, from the superciliary region, and two or three small pieces at the supra-orbital notch, it was discovered that several fragments of small size of the inner table were imbedded in the membranes above the frontal sinus. While these were being removed, the vessels of the brain being much engorged by the struggles of the man when anæsthesia was being induced, *a drachm and a half or two drachms of cerebral substance* escaped from the wound, fairly gushing out. It had the appearance and consistence too of healthy tissue but lately inflamed, as if real suppurative inflammation had not imparted its own character and consistence to it. There was a lesion evidently. The portions of inner table removed were entirely detached, and no force was required or used to get them away. After closing the wound and applying cold water dressings to the head, the patient was kept very quiet in bed, with nourishing but bland diet ordered, and the case carefully and anxiously watched. We anticipated trouble, and confess our hopes for a successful issue were not very bright.

On the day following we found our patient improving, with his symptoms of compression rapidly subsiding. He was becoming rational, quiet,

and hopeful, with a better pulse. In a few days he began to get so much better that he persisted in thinking himself nearly well. In two weeks he was able to be about the ward. The upper wound remained open for some months, and some small fragments of bone were removed, but the opening in the orbital plate soon closed. There was no return of cerebral symptoms, except temporary headache after any undue excitement or indiscretion.

This case remained under our observation until the spring of 1865, and up to that time there had been no return of inflammation. Even the heat of the sun did not affect him as much as many in whom we have seen only a contused wound of the head.

In these cases, and the one which follows, we cannot resist the conviction that by timely interference by removal of the cause of compression, viz., spicula of bone pressing upon the brain, immediate relief was afforded, and, in all probability, life saved.

CASE III. G. R. L., private Co. M, 6th Mich. Cav., American, 25 years of age, entered "Mower" Sept. 21, for gunshot fracture of the occipital bone, received at Front Royal, August 16, 1864. Wound supposed to have been made by a musket-ball which struck the skull one inch to the right of the occipital protuberance, producing a fracture without any evidence of depression of the external table. The bone was in no way detached so as to be removed. A month or more had elapsed since the injury was received, the wound was doing well except the tendency of the fractured portion to slough, and as there had been no cerebral disturbance, so far as we could learn, the case seemed to be doing well. I noticed, however, in my examination of the man, that, though his general health was not much impaired, his mind was somewhat affected. This case was also under the care of Dr. Lapsley.

Oct. 18. Febrile symptoms, following a chill, set in succeeded by nausea, headache, with slow pulse. The day following a tendency to stupor and listlessness came on. The pain in the back part of the head had been extreme until this tendency to stupor set in.

20th. It was deemed advisable to remove a section of bone at the point of fracture, which was done by raising a circular flap of the scalp. There was a sufficient solution of the continuity of the external table to enable us to remove a portion $\frac{3}{4}$ of an inch by $1\frac{1}{4}$ inch with the elevator and a pair of strong forceps. The vitreous table was found to be fractured an inch or more in diameter, the central portion of the fragments resting upon the membranes. Upon removing these fragments there was, as yet, only an excessive degree of congestion of the membranes and vessels, except at the point of contact where the tissues were beginning to break down. No abscess had yet fully formed. Wound closed and water dressings used. In a few hours after the operation the patient expressed himself as greatly relieved, nausea ceased, headache left him, and in a few days his entire consciousness returned. It was some days before all the febrile symptoms disappeared. The inflammatory symptoms were combated upon general principles. The case progressed favourably without any drawbacks, so as to be about the ward in two weeks.

Nov. 11. Went home on an election furlough, and returned in twenty days, still improving. He was finally transferred to his own State, with every prospect of complete recovery.

Anæsthetic used in this case, chloroform, which was generally administered in this hospital.

CASE IV. H. A., private Co. L, 2d N. Y. Rifles, 34 years of age, was admitted to "Mower" Hospital July 16th, 1864, for gunshot wound of scalp received at Petersburg, Va., July 8th. Minie-ball struck the head at the vertex, denuding the skull of the pericranium in its track, and causing two slight fissures of the external table of the frontal bone. This case was under the care of Dr. Fell, to whom we are indebted for the notes.

July 24. Patient had a severe attack of acute pleuritis, by which he was much debilitated, and on the 26th this was still complicated by symptoms of hepatitis, when he was found suffering great distress with short respirations, quick pulse, breathing laboured, conjunctiva and skin tinged with yellow, tongue dry and coated. Complains of pain in the region of the liver. Was given hyd. chlor. mite gr. iij, ext. colocynth. co. gr. vj in three doses during the day. Emplast. canth. 4 by 8 to side and chest. Syr. scillæ, liq. morph. sulph., and vin. antimon. equal parts, a teaspoonful every three or four hours. Stimulants and tonics every four hours.

'28*th.* Very much jaundiced, and sinking rapidly. At 9½ P. M., patient died.

Post-mortem revealed an unlooked for condition in the brain. There was no fracture of the cranium except the slight fissures of the external table, in which were imbedded small portions of lead. Upon removing the calvaria, an abscess was found directly under the point of injury containing half an ounce of dark green offensive pus. This was over the longitudinal sinus. No great amount of congestion or lesion of the brain was evident, but the dura mater was considerably thickened at this point.

The liver presented no signs of either acute or chronic inflammation, being of a pale and quite natural appearance. The jaundice must have arisen from some temporary biliary derangement. In the pleural cavity there was a pint of serum in each side with a number of attachments of the pleura. There had been inflammation of the lower lobe of right lung.

The symptoms of compression, if present, had been so masked by the pleuritic and hepatic indications that our attention had been withdrawn in a measure from the injury to the head, and we were somewhat surprised to find an abscess of such size in the cranial cavity without more prominent symptoms existing.

CASE V. O. B., private Co. B, 6th N. H. Vols., single, 18 years of age, German, received gunshot fracture of left temporal and parietal bones, at Petersburg, Va., July 19th, 1864. When admitted to "Mower" Hospital, July 26th, a fungous growth or hernia cerebri of the size of a pigeon's egg was protruding through what appeared to be an aperture in the cranium made by a large trephine. We were unable to learn from the patient at what time or under what circumstances he had been operated upon, nor anything reliable respecting his case. He seemed to have his entire senses, was cheerful, had a good appetite, and his general health had not yet become impaired. No constitutional signs of compression were developed. He was treated by damp compresses of patent lint, wet with lime water, bound as firmly as consistent upon the growth to repress, if not return it. Absolute quiet in recumbency, light diet, no stimulants.

August 3. Herina increasing and taking on a vascular condition. An abscess in the brain substance suspected, although as yet the patient's general

condition is little changed. Complains of no pain. *There is very little sensation produced by contact with the tumour.* Pupils natural, consciousness seems nearly perfect; sleeps quietly and natural; pulse 70 and full. The protruding mass is the size of a pullet's egg. It was examined to-day by Dr. Morton, who incised it, hoping to reduce it by so doing. By the incision one of the small branches of the cerebral artery was divided, which bled freely for some time.

7*th.* There is little perceptible change in the patient except that he begins to be more feeble. Appetite failing.

12*th.* Has more appetite to-day; seems quite as well as usual; and talks coherently *only when spoken to,* showing a disposition to require arousing to direct his attention.

20*th.* The growth steadily increasing and health beginning to be compromised, the propriety of excising the mass or of removing it by strangulation had been decided upon. Dr. Agnew being present, it was decided to pass a ligature around each half of the body, which I did by passing a double threaded curved needle below the cranial tables inclosing each half of the neck of the tumour. After gently tightening the ligatures, we were enabled to shave off the excrescence, without any hemorrhage, down to a level with the external table. The ligatures were then tied and left to remove the remaining portion. At the time of the operation the growth was the size of an ordinary orange. The patient exhibited little sense of suffering during the operation, but there seemed to him to be a sense of relief to that side of the head after it. No anæsthetic was used. Moderate pressure was now applied by means of a compress saturated with lime-water, firmly bound on.

21*st.* Little change.

22*d.* Patient, though rational, begins to fail in strength; pulse more soft and compressible; appetite failing, with a disposition to listlessness.

25*th.* Incoherency with a commencing comatose tendency are manifest, while the growth disposes to reappear.

26*th.* Patient rapidly sinking. Loss of motion and sensation of *right* side; respiration laboured.

27*th.* Breathing stertorous; pupils widely dilated; has no control over the sphincters.

28*th.* Died at 3 o'clock A. M.

Post-mortem revealed a large abscess from two and a half to three inches in diameter in the left hemisphere, with softening of much of the surrounding tissue. All the vessels of the brain were considerably congested. A large trephine had been employed to remove the cranial fracture at the seat of injury. No fracture was found beyond the margin of the trephined groove.

CASE VI. J. E., private Co. C, 71st Pennsylvania Vols., American, single, entered St. Joseph's U. S. A. Hospital, Philadelphia, Oct. 25, 1862, for gunshot wound of right temporal region received at battle of Antietam, Sept. 17, 1862.

A musket ball struck the superior border of right zygoma at the central portion and passed in, apparently, to the side of the head. A small portion of zygoma was splintered off. The man was knocked insensible by the blow, and when he returned to consciousness found himself in the field hospital with his head dressed. He was said to have bled profusely. In a few days he came to Philadelphia, without leave, and put himself under the

care of a physician. Not recovering so soon as he expected, and fearing unaccounted absence from his company would cause him trouble, he obtained permission to report to the hospital for treatment.

When admitted he was suffering from severe pain in the affected side of the head, indistinct vision, with a general malaise and tendency to incoherency in his replies to questions. Upon examination of the wound, a loose substance was found in the temporal region, which, upon being removed, proved to be a round ball, smoothly divided into two portions. The smaller, about one-third, was imbedded in the temporal muscle, the remaining two-thirds resting against the temporal bone. There was no fracture of the bone, the force of the blow having been spent upon the zygoma. The bullet was as smoothly divided as if it had been cut by a knife. The patient was confined to bed with head slightly elevated; cold-water dressings applied, and a mercurial purge administered. The more serious symptoms subsided in a few days, and the patient was able to be around the grounds. For some weeks he was subject to dizziness, temporary and partial loss of vision, after any indiscretion in diet or from any undue excitement. By careful attention in these respects he rapidly regained his general health, the wound soon healed, and he was returned to his regiment considered nearly well November 22, and fit for duty.

In the two cases which follow, I have never been able to divest myself of the conviction, that an earlier resort to surgical interference would have given a far greater chance of success, and shall continue to regret we did not operate sooner than we did.

CASE VII. J. S., Corporal, Maine Volunteers, American, single. Entered "Mower" Hospital, September 26, 1864, for gunshot wound of head received at Cedar Creek, Virginia, September 19. Minie ball struck left side of frontal bone two inches above the superciliary ridge, causing, to all appearances, only a scalp wound with a trifling denuding of the pericranium. Cold water dressings were continued, and the usual precautions enjoined with every prospect of a rapid convalescence. Water dressings had been applied.

In the course of the next ten days, however, premonitory head symptoms, in a violent and unmistakable manner, were exhibited, calling for active treatment. After trying medicinal remedies for a short time, it became evident that an operation was demanded to afford any hopes of benefit. About the twelfth day after admission, and the third or fourth after serious cerebral symptoms presented, the patient becoming rapidly comatose, it was determined to trephine. Assisted by Dr. Cummins, to whom I am indebted for a report of the case, and Dr. Morton, I performed the operation by the use of a medium trephine, after making a crucial incision in the scalp. The only visible injury to the external table was the slightest possible indentation made as if the ball had made a glancing shot. Neither fissure nor fracture was perceptible. Upon removing a section of this plate the vitreous was found fractured and split off into scales to the extent of an inch and a half, some of them being driven down upon the membranes. Six or seven spiculæ were removed. An abscess had formed in the left hemisphere at the point of injury, and was pointing, though as yet no lesion had taken place. The membranes, so far as could be observed, were much congested.

For three or four days there was some improvement in the patient. His

pulse became fuller and more regular; there was less of the coma; he was more rational and comfortable; the general cerebral symptoms subsiding. But suppurative and inflammatory action had gone too far to be arrested, and on the fifth day after the operation he began to sink, and gradually passed into a stupor and coma on the sixth day, and died on the seventh.

No *post-mortem* was obtained, as his friends were anxious to remove his body.

CASE VIII. J. B. S., Co. B, 48th Pennsylvania Volunteers, German, aged 33. Admitted May 19, 1865, for injury to head. Wounded April 7th, near Richmond Virginia. Musket-ball struck in the centre and upper part of os frontis in the vertical direction of the head, making an incision about two inches in length in the scalp. The pericranium was detached to a small extent, but no fracture was observable.

May 22. Three days after he was admitted, the right temporal region and eyelid became inflamed and œdematous, threatening erysipelas or the formation of an abscess. A high fever accompanied this condition with quick pulse, furred tongue, pain in the head and delirium. Dr. Morton, suspecting an abscess in the temple, made an incision, but none had yet been found. By this means a free local bleeding was accomplished. A brisk cathartic was administered. Tinct. ferri chlor. and quinia freely given, and sol. sulphite sodæ applied to the face and head. Two days following, the opposite side of the face became involved, and head symptoms became more aggravated with approaching comatose symptoms.

24*th*. Chloroform was administered, a crucial incision made, and a small trephine used to make a section of the bone. Upon exposing the cranium a scarcely perceptible fissure one and a half inch in length was brought to view, from which a thin sanious discharge was issuing. After removing the section it was found that the fissure had extended through both tables and had not fractured either. There was no pressure consequently upon the brain. Quite an amount of pus came from the wound, showing that great disorganization had been going on in the brain. After twenty-four hours lingering the patient succumbed. Coma increased, and he died on the 25th at about 3 o'clock P. M.

Post-mortem revealed greatly congested anterior lobes, with the formation of pus over a large part of the longitudinal sinus. All the vessels of the membranes were much engorged, and at the point of injury disorganization had taken place and the membranes had given way to the suppurative process.

CASE IX. J. B., private Co. K, 100th Pennsylvania Volunteers, American, age 27, single, entered "Mower" Hospital April 9, 1865, with shell wound of head received at Fort Steadman, Virginia, March 25, 1865. A fragment of shell entered just anterior to the junction of coronal and sagittal sutures, fracturing the skull to the extent of three-quarters of an inch but not detaching the bone. No untoward symptoms had as yet developed. General health good; wound looking well. The patient was cautioned as to the serious nature of the injury he had received and the liability to dangerous inflammation, and strict instructions given him as to his following the ordinary precautions laid down in all such cases.

It is a noticeable fact in nearly all head injuries that patients do not realize the degree of danger they are in, owing to the absence of sensible physical signs in an early stage of the injury. There is usually no pain.

April 11. Was thoroughly examined and the case progressing satisfactorily.

15*th*. Attention arrested to the patient this morning as he complains of sense of pain and weight in the forehead, accompanied with other symptoms of cerebral disturbance. We naturally anticipated serious results, but were happily disappointed, as cold applications to the head, free purgation and general sedative treatment relieved the head symptoms, and in twenty-four hours the patient was much better of the more serious signs. In a few days this man regained his usual condition, and the case continued to progress favourably without even necrosis.

May 29. Discharged, the wound in scalp nearly healed with every prospect of entire recovery.

CASE X. R. C,, private Co. H, 31st Maine Volunteers, American, 21 years of age, wounded April 3, 1865, at Petersburg, Virginia. Admitted to "Mower" Hospital, April 9. A piece of shell struck near the anterior superior angle of the left parietal bone, producing a fissure of 1½ inch in length with very slight depression of the external table and denuding the bone of pericranium in the tract of the wound. General condition not below par, and no indication to require other than simple dressing and careful watching.

April 13. Patient complained of pain in head following a chill. Has high fever with cerebral symptoms prominent. As in the preceding case active catharsis was induced, cold applied to the head, and for a few days small doses of calomel and opium given.

Improvement in every respect soon followed and obviated any mechanical interference. This case went on to convalescence, though there was a tendency to necrosis of the outer table still, when last seen, which was in June. The external wound was rapidly healing and the scalp nearly closed. These two cases were under the care of Dr. Longwill.

CASE XI. D. S., private Company D, 26th Pennsylvania Volunteers, American, 40 years of age, received a gunshot wound from a minie ball on the left side of the head, at Spottsylvania Court House, Virginia, May 15, 1864. Admitted to "Mower" Hospital, June 7.

June 8. I examined the case, and found the ball had entered at the external angle of the left eye, passing through the malar bone into the head in the direction of the base of the skull. The man was positive the missile had not been removed. We were unable to find it with the ordinary probe. *The eye was not injured.* The wound remained open for some weeks with little change in the condition of the patient, and we were unable to find the bullet until in November, when we discovered it by means of a Nélaton probe, impacted behind the zygomatic process of the temporal bone. A partial anchylosis of the inferior maxilla had been a result of the injury owing to an enlargement in the glenoid fossa of the temporal bone.

It was determined to attempt the extraction of the ball, Drs. Agnew and Foggo assisting. After chloroform had been administered, I made an elliptical incision along the malar bone from the wound of entrance, and raised a small flap upon that bone. We were able to introduce only a pair of small dressing forceps into the wound, and were obliged to remove, by means of a hammer and chisel, a considerable portion of the malar bone, before we were able to remove the ball, which had been much distorted in shape by the force of its contact with the bones. In our manipulations

we were fearful of injury to the internal maxillary artery, but were spared so serious an accident.

The case passed on rapidly to a cure, with the exception of the anchylosed condition of the lower jaw, owing, we supposed, to inflammation produced in the fossa in which the articulation rests. Passive motion was gradually overcoming this difficulty, when the man was discharged July 23, 1865.

CASE XII. G. S., private Co. —, 50th Heavy Artillery, German, was admitted to "Mower" Hospital, September 12, 1864, suffering from gunshot wound of the left side of the head received at the *second battle of Bull Run, August* 29, 1862, *more than two years before.* Bullet entered just anterior to the external meatus of left ear, and still remains in the head undiscovered. Ear discharges offensive pus.

November 6. Received an election furlough from which he returned in December. Health not much impaired.

January 5, 1865. Face and head inflamed, and health beginning to give way under a febrile condition.

Patient was put under chloroform and the ball found, by means of a Nélaton probe, imbedded probably in the petrous portion of the temporal bone. We were enabled to get hold of it with different kinds of forceps, but were unable to extract it, and desisted at that time for two reasons. One was that the parts were so excessively sensitive that it seemed nearly impossible to produce anæsthesia after having worked at the ball for a short time; and another reason was we concluded that it would be much more safe to remove the bullet by means of small cutting forceps, which we had not at hand, than to continue forcible means in this locality.

Temporary relief was afforded by our efforts by the opening of a deep seated abscess, and after a few days of illness the patient was again about. He had lost his hearing on this side at the time he was wounded. Necrosis must eventuate, but all our endeavours to induce the patient to submit to any further efforts to remove the missile were unavailing.

We saw the case up to July, 1865, when the large amount of offensive discharge continued, and the man wore an anxious, haggard look, as if he feared serious results. His health was also undermined.

This case was under the care of Dr. Fell, who, with Dr. Agnew, assisted in the attempt to extract the ball.

No. 627 NORTH 13TH STREET, PHILADELPHIA.

ART. VII.—*Physiological Experiments connected with the Silent, Talking, and Passive Movement Pulse, and the Silent Respiration—made by J. H. Salisbury, M. D., and Dr. M. W. House, on Members of the Biological Society, whose Names appear in the Tables; with Explanations and Remarks.* By J. H. SALISBURY, M. D., Professor of Histol., Physiol., and Pathol. in Charity Hospital Med. Coll, Cleveland, Ohio.

THESE observations and experiments have been made with great care, every precaution having been taken to render them reliable and of value. Apparatus was constructed so as to place the body without any effort on

the part of the subject experimented upon, either in a horizontal or perpendicular position, or at any desired angle. The parties experimented upon were all in perfect health, and ranged in age from twenty-four to forty-five, except one—Dr. Henderson—who is fifty-one.

The experiments were performed from two to five hours after eating, and mostly during the evening from 8 to 11 P. M.

Mean of a Series of Experiments on the Silent and Talking Pulse, and on the Silent Respiration.—In these experiments, after the body was placed in any given position, a sufficient time was allowed for the pulse to settle, before the observations in that position were made. This time ranged from two to three minutes. This was found to be abundantly long, as the body was moved by apparatus without the least effort to itself.

		Silent Pulse.		Talking Pulse.		Silent Respiration.	
		Number of observations.	Mean pulse.	Number of observations.	Mean pulse.	Number of observations.	Mean respiration.
On the back	Hands raised above the head	8	67 13/16	2	75 3/4	2	15 1/2
	Hands by side	13	67 1/2	8	72	7	15 5/7
Body horizontal,	Hands by the side, and head raised 4 in.	6	71 7/12	1	75	2	13
On the back, legs horizontal, and body inclined at an angle of,	22 1/2°	6	73 1/3			1	14
	45	14	75 5/14	10	77 1/20	8	16 5/16
	67 1/2	6	74 2/3			2	17 1/2
	90	10	75 1/2	6	78 1/2	3	16 1/3
On the back, body horzontal, and legs inclined at an angle of,	22 1/2	6	67 1/2			2	17 1/2
	45	13	66 8/13	8	71 3/16	6	16 1/2
	67 1/2	6	69 1/3			2	17 1/2
	90	9	70 8/9	4	76 3/4	3	16 1/3
On the back, body and legs inclined at an angle with the hips of,	22 1/2	6	69 1/4			2	15 3/4
	45	14	66 1/4	10	71 3/4	7	16 1/7
On back, body inclined (head highest) at an angle of,	22 1/2	6	71 1/4			2	17 1/4
	45	11	82 7/11	7	82 9/14	5	16 1/5
	67 1/2	6	85 1/4				
Body erect,	90	14	83 1/4	10	81 1/4	5	18
On back, body inclined (feet highest) at an angle of,	22 1/2	6	63 1/12				
	45	8	61 9/16				
Body horizontal,	On right side	6	66 2/3				
	On left side	6	67 7/12				
	On abdomen	6	69 5/12			1	20

These experiments were made on the following medical gentlemen: W. W. Firestone, M. D.; D. B. Elson, M. D.; R. N. McConnell, M. D.;

Chas. H. Merrick, M. D.; R. A. Henderson, M. D.; Geo. H. Pease, M. D.; I. J. Livers, M. D.; J. P. Waste, M. D.; John S. Hershiser, M. D.; and Dr. H. A. Root.

The mean silent pulse of 8 observations, position horizontal, on back, with arms extended above the head, is $67\frac{13}{16}$. The mean talking pulse of 2 observations, same position, $75\frac{3}{4}$. The difference between the silent and talking pulse, $7\frac{94}{100}$.

The mean silent pulse of 13 observations, position horizontal, on back, hands by side, $67\frac{1}{2}$. The mean talking pulse of 8 observations, same position, 72. Difference between the silent and talking pulse, $4\frac{1}{2}$.

The mean silent pulse of 6 observations, position horizontal, on back, head raised, 4 inches on a support, $71\frac{7}{12}$. The mean talking pulse, 1 observation, same position, 75. Difference, $3\frac{42}{100}$.

The mean silent pulse of 6 observations, position on back, head highest, body inclined at an angle of $22\frac{1}{2}°$, $71\frac{1}{4}$. Talking pulse, same position not noted. The mean silent pulse of 11 observations, position on back, head highest, body inclined at an angle of 45°, $82\frac{7}{11}$. Talking pulse, mean of 7 observations, same position, $82\frac{2}{14}$. Difference between silent and talking pulse $\frac{2}{100}$, the silent pulse having a fraction the highest.

In gradually elevating the body from a horizontal position (on back) to the erect, an interesting feature will here be noticed. In the horizontal position, the talking pulse is $3\frac{42}{100}$ the highest. At 45° the talking pulse and silent pulse are very nearly equal. In the erect position, the talking pulse is two the lowest.

The difference between the silent pulse, position horizontal, on back, hands by side, mean of 10 observations, and body at an angle of 45°; mean of 11 observations is $15\frac{14}{100}$; and between the horizontal and perpendicular positions (the latter a mean of 14 observations), $15\frac{75}{100}$.

The difference between the talking pulse (mean of 8 observations) position horizontal, and that of an angle of 45° (mean of 7 observations), is $10\frac{64}{100}$. The difference between the talking pulse, position horizontal, and that of the erect position (mean of 10 observations), $9\frac{25}{100}$. Hence it will be seen that the difference between the silent pulse in different positions is greater than that of the talking pulse in the same positions.

The mean silent pulse of 14 observations, position on back, legs horizontal and body raised at an angle of 45°, is $75\frac{5}{14}$. The mean talking pulse (10 observations), same position, is $77\frac{11}{20}$. Difference $2\frac{19}{100}$. The mean silent pulse (10 observations), position on back, legs horizontal, and body raised at an angle of 90°, is $75\frac{1}{2}$. The mean talking pulse (6 observations), same position, is $78\frac{1}{2}$. Difference 3.

The difference between the silent pulse, mean of 13 observations, positions horizontal, hands by side, and the silent pulse, mean of 4 observations, position on back, legs horizontal, and body raised at an angle of 45°, is $7\frac{86}{100}$. The difference between the talking pulse, same positions,

the former a mean of 8 observations, and the latter 10, is $5\frac{11}{100}$. The difference between the silent pulse, mean of 13 observations, position horizontal, hands by side, and the silent pulse, mean of 10 observations, position on back, legs horizontal, and body raised at an angle of 90°, is 8.

The difference between the talking pulse of same positions, the form a mean of 8 observations and the latter of 6, is $6\frac{1}{2}$.

The mean silent pulse (13 observations) position on back, body horizontal, and legs elevated at an angle of 45°, is $66\frac{3}{13}$. The mean talking pulse, of 8 observations, same position, is $72\frac{3}{16}$. Difference, $5\frac{96}{100}$.

The mean silent pulse (9 observations), position on back, body horizontal, and legs raised at an angle of 90°, is $70\frac{8}{9}$. The mean talking pulse (4 observations), same position, is $76\frac{3}{4}$. Difference, $5\frac{86}{100}$.

The difference between the silent pulse (mean of 13 observations), position horizontal, hands by side, and the silent pulse, mean of 13 observations), position on back, body horizontal, and legs raised at an angle of 45°, is $1\frac{27}{100}$, the pulse of the latter position being the lowest. The difference between the talking pulse of same positions (each a mean of 8 observations), is $\frac{19}{100}$, the latter being slightly the highest.

The difference between the silent pulse (mean of 13 observations), position horizontal, hands by side, and the silent pulse (mean of 9 observations), position on back, body horizontal, and legs raised at an angle of 90°, is $3\frac{37}{100}$. The difference between the talking pulse, same positions, mean of 8 and 4 observations, is $4\frac{75}{100}$.

The mean silent pulse (14 observations), position on back, and legs and body raised at an angle with the hips of 45°, is $66\frac{1}{4}$. The talking pulse (mean of 10 observations) of same position, is $71\frac{3}{4}$. Difference, $5\frac{1}{2}$. The silent pulse of this position is $\frac{25}{100}$ less than that of the horizontal position, showing that this position must be slightly more one of muscular rest than the horizontal.

The mean silent pulse (8 observations), position on back, body inclined (feet highest) at an angle of 45°, is $61\frac{9}{16}$. The mean talking pulse, same position; mean of 10 observations is $81\frac{1}{4}$. Difference, $19\frac{69}{100}$. This is a remarkable difference, showing the influence upon the talking pulse of an increased flow of blood to the brain, which would be the tendency in this position. When, however, the brain is quiescent, the pulse is lowered by placing the body in this position. The pulse is about the same when lying upon the back as it is when lying upon the left side. It is slightly lowered by lying upon the right side and elevated by lying upon the abdomen.

The respiration is also increased in a marked degree, by lying in this last mentioned position. The silent respiration is not influenced in any considerable degree by changing the positions of the body. It will, however, be desirable to extend these observations before drawing inferences in this direction. The coming winter this series of experiments will be greatly extended by the Society.

From the foregoing experiments, it appears, as a general rule, that the positions requiring the least muscular effort have the lowest pulse; and that, in such positions, the difference between the silent and talking pulse is greatest. There is an exception to this, where the body is placed on an inclined plane, the head highest. Positions requiring the greater muscular effort have the higher pulse; and the difference between the silent and talking pulse is the least. There is hence a greater difference between the silent pulse of positions requiring muscular effort, and those requiring little or none, than between the talking pulse of the same positions; showing quite conclusively that the muscular and nerve influences over the pulse, are to a great extent independent of each other.

When the body is inclined upon a plane surface (head highest) and there being no muscular effort, there is but little difference between the silent and talking pulse; but when the body is inclined with the feet highest, the difference is very great; the silent pulse being very low, while the talking pulse is that of the horizontal position with hands by side.

Mean Results of Three Series of Observations, made on Drs. Elson, Patterson, and Sommers, showing the Influence of Passive Motion upon the Pulse.

	Mean of the three series of observations.
Standing, hands by side	82
In the horizontal position (hands by side), on back	66⅔
Horizontal position, with passive motion of right leg, flexing and extending it on hip, from horizontal to an angle of 45°, every four pulsations	69
Same position, right and left limbs flexed and extended every four pulsations	77⅓
Same position, right and left limbs flexed and extended alternately every four pulsations	79⅓
Same position; flexing and extending right leg; thigh perpendicular and leg horizontal, bending knee at right angles every four pulsations	74
Same position; both legs flexed and extended; thighs perpendicular and legs horizontal, every four pulsations	89
Same position; flexing and extending legs; thighs alternately perpendicular and horizontal, and legs horizontal, every four pulsations	88⅙
Same position; flexing alternately arms from horizontal to perpendicular, and then flexing arms at elbows at right angles, every four pulsations	71⅔
Same position; raising arms alternately from horizontal to perpendicular every four pulsations	71⅓
Same position; flexing alternately forearm from horizontal to perpendicular, every four pulsations	69
Same position; flexing arms across chest, alternately every four pulsations	67⅓

These observations are the beginning of a series which will be continued during the coming winter. The few here presented are sufficient to indicate the influence of passive motion upon the pulse. It will be seen that the mean horizontal pulse is 66⅔. That the mean horizontal pulse, with passive movement of the right leg, upon the hip, from horizontal to an angle of 45° every four pulsations is 69. That the mean pulse of same position with right and left legs flexed and extended at same time, every four pulsations is 77⅓. That the mean in same position, the right and left legs flexed and extended alternately every four pulsations, is 79⅓. That the mean pulse from flexing and extending the right leg, thigh perpendicular and leg horizontal (bending knee at right angles), every four pulsations, is 74. This is five more pulsations per minute than when flexing the leg on the hip (without bending the knee) at an angle of 45°. The mean pulse, where the legs are flexed and extended alternately, thighs perpendicular, and legs horizontal, every four pulsations, is 88⅙. The mean pulse from flexing alternately arms from horizontal to perpendicular, and then flexing arms at elbows at right angles every four pulsations, is 71⅔. The mean pulse form raising the arms alternately from horizontal to perpendicular every four pulsations without bending the elbows is 71⅓. The mean pulse from flexing alternately the forearm from horizontal to perpendicular every four pulsations is 69. The mean pulse from flexing alternately the arms across breast every four pulsations is 67⅓. It will be seen from the foregoing that the pulse is increased in proportion to the amount of passive muscular movement.

ART. VIII.—*Experiments Connected with the Effects of the Sulphate of Quinia and Cinchonia upon the Healthy Pulse.* By D. B. ELSON, M. D.

THE experiments the first day in the first series, show the pulse without quinia. Those of the second day show the effect upon the pulse of two grains of quinia taken every half hour. The third, the effect upon the pulse of five grains of quinia taken every half hour. The fourth, the same. The fifth, the effect upon the pulse of ten grains of quinia taken every half hour. The sixth, the effect of twenty grains of quinia taken every half hour.

In the second series, the experiments of the first day show the effect upon the pulse of five grains of the sulphate of cinchonia, taken every half hour. Those of the second show the effect upon the pulse of ten grains of cinchonia, taken every half hour. Those of the third, the effect of twenty grains of the sulphate of cinchonia, taken every half hour.

The detailed results are omitted, the means only being given.

Daily Means Calculated from the Detailed Observations.

	Day of observation.	No. of observations.	Mean pulse of each day's observations.
No medication	1	6	$70\frac{1}{3}$
2 grains of quinia every half hour till 5 doses are taken	2	5	$70\frac{1}{5}$
5 grains of quinia every half hour till 8 doses are taken	3	8	$69\frac{3}{8}$
5 grains of quinia every half hour till 3 doses are taken	4	3	$69\frac{1}{3}$
10 grains of quinia every half hour till 10 doses are taken	5	10	$69\frac{1}{2}$
20 grains of quinia every half hour till 10 doses are taken	6	10	$73\frac{3}{8}$
5 grains of cinchonia every half hour till 11 doses are taken	1	11	$76\frac{9}{11}$
10 grains of cinchonia every half hour till 12 doses are taken	2	12	$78\frac{1}{6}$
20 grains of cinchonia every half hour till 11 doses are taken	3	11	$94\frac{8}{10}$

The quinia, while it increased the volume of the pulse, did not appear very much to influence its rapidity, while the cinchonia decidedly accelerated it.

ART. IX.—*Ophthalmia Epidemica on board the U. S. Ship Jamestown, at Yokohama, Japan, in* 1863. By THOMAS C. WALTON, M.D., Passed Assistant Surgeon U. S. Navy.

CASE I. *August* 11, 1863. A. S. B., Acting Master U. S. Navy, aged 21, native of Massachusetts, of plethoric habit of body, general health excellent. The patient was exposed to the sun's rays for several hours yesterday while on shore; towards evening he experienced a smarting pain in his right eye. On examination this morning the right conjunctiva is found to be considerably injected, most marked on the inferior palpebral portion, and secreting muco-purulent matter. No pain is experienced, but the eye feels hot, and as if sand were in it; there is slight photophobia. Bowels regular; pulse and skin natural. Ordered low diet; to bathe the eye frequently with warm water, and to keep out of bright light. ℞.—Zinci sulphatis, gr. ij; morphiæ sulph. gr. j; aquæ destil. ℥j. Misce et ft. collyrium. Signa. Allow a few drops to fall on the eye thrice daily.

12*th*. Inflammation of right conjunctiva subsiding; that of the left eye became inflamed last evening, and is now more injected than the other. Treatment continued.

13*th*. Improving; ocular conjunctiva of right eye nearly clear. Secretion from both decreasing, and becoming less purulent.

14*th*. Right eye nearly well; left conjunctiva clearing up.

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15*th*. Right eye well; left palpebral conjunctiva slightly injected. Collyrium to be continued another day. Discharged to duty.

CASE II. *August* 25, 1863. J. B., ship's cook, æt. 27, native of Delaware; scrofulous diathesis; general health good. Came under treatment with both conjunctivæ inflamed; one became affected thirty-six hours ago, and the other twelve hours afterwards, but he persisted in attending to his duties as cook until the sight of the fire became intolerable. Has considerable photophobia, the palpebral conjunctivæ of both eyes is much injected, and secretes a copious muco-puruloid matter. Bowels regular; appetite poor; pulse natural. R.—Argenti nitratis, gr. ij; aquæ destil. ℥j. Fiat solutio. Signa. Allow a drop or two to fall on the conjunctiva twice daily. Inject a dilute solution of alum occasionally between the eyelids, and bathe the eyes frequently with warm water. Keep in the dark.

26*th*. Excessive chemosis exists, with infiltration of the eyelids; the palpebral conjunctivæ are much injected, while the ocular portion is pale. Increase the strength of the nitrate of silver collyrium to six grains to the ounce; continue the alum injection, and omit the warm water bathing. R.—Liq. plumbi diacet. ℥j; tinct. opii acet. ℥ss; aquæ, ℥viij. Misce. Signa. Keep a piece of lint saturated with the solution constantly applied over the eyes.

28*th*. Chemosis continues, with injection of the conjunctivæ extending over the entire tissue. Eyelids infiltrated and stiff; complains of circumorbital pain. No evidence of other ocular tissue being implicated. Bowels regular; pulse good. Treatment continued. Also apply vesicat. cantharidis over each mastoid process for eight hours; afterwards dress the blistered surfaces with simple cerate.

29*th*. Chemosis of right eye subsided, that of left much lessened; injection about the same. Dress blistered surfaces with cerat. sabinæ. Continue other treatment.

30*th*. Chemosis altogether subsided; inflammation much lessened, and secretion diminished; has but little pain or photophobia.

September 1. Improving; ocular conjunctiva clear; that of palpebræ still injected. Blistered surfaces raw, change dressing for latter to simple cerate. Continue other treatment.

3*d*. Palpebral conjunctivæ still slightly injected; blistered surfaces healed. Discontinue treatment except using the zinc collyrium twice daily. At bedtime apply unguent. hydrag. nitrico-oxidi to the margins of the eyelids.

5*th*. Well. Discharged to duty.

Remarks.—The foregoing are two cases of an epidemic ophthalmia which occurred on board the U. S. Ship Jamestown, when at the port of Yokohama, Japan, during the months of August and September, 1863. The disease was prevailing in the settlement at the time, and extended from there to the ship. It is said by the oldest European residents to prevail with greater or less severity during those months every year.

In all ninety persons were treated on board for the disease (the ship's crew at the time numbered two hundred and twenty). Officers and men, the negro and the white, the young and the old, were alike affected. Those who had been on shore were first attacked a few hours before their return to the ship; the majority from twelve to twenty-four hours afterwards.

When the disease was at its height on board, a few persons were attacked who had not been on shore for months, and had not been exposed to the sun's rays. One case was that of a patient screened off from the rest of the ship's company, who was attacked by the disease the evening following one in which a man suffering from the affection had slept in an adjacent hammock.

Its duration in individual cases was from ten to twelve days, the average period of treatment was five days; the epidemic prevailed on board of the ship twenty-five days. Both eyes were universally attacked, the left one fifty-three times first, the right one thirty-seven times. Perfect recoveries were made in all. In only one case was there a relapse, that of a quarter-master who went on duty too early. In none did the disease occur a second time; but from the experience of residents on shore persons having the disease one year, may become affected with it the succeeding one.

The tendencies of the disease were not particularly destructive where ordinary care was taken. The first case given illustrates the degree in which the majority were affected; the other is as it occurred in broken-down constitutions, or in persons who were long exposed to causes productive of ocular inflammation.

In treating the mild cases, seclusion from light, frequently bathing the eye with warm or cold water, as found most agreeable, and in some the use of mild, astringent collyria was all that was necessary. In the more severe cases stronger collyria were indicated, also frequent cleansing the eye of the purulent secretion, counter-irritation, and attention to the general health. In no case that presented itself would depletory measures have been beneficial. In clearing up the remaining conjunctival injection, an application to the margin of the eyelids of the unguent. hydrarg. nit. oxydi was found to be very effectual.

Regarding the causes of the affection nothing definite can be stated. It may have been due to some atmospheric peculiarity probably aided by the fine silicious particles which were being blown about from off the streets of Yokohoma, and by exposure to the sun's rays during the middle of the day. No doubt many cases were due to its propagation by contagion, actual contact of the secretion with the conjunctiva being, I believe, essential. During the prevalence of the epidemic many persons who were not affected with the disease were troubled with an itchiness or tenderness of the conjunctiva, and a hyper-secretion of the Meibomian glands. The epidemic visited all or nearly all the ships in the harbour, some fifty in number.

ART. X.—*Ligation of the Axillary Artery in the First Portion of its Course.* By JOHN H. BRINTON, M. D., of Philadelphia.

THE ligation of the axillary artery in its continuity has been frequently performed during the late war, for the arrest of hemorrhage following gunshot wounds, and after amputation. In most of the instances reported the ligation of the vessel has been effected low down in the axilla, below the point at which it is crossed by the pectoralis minor muscle. The artery is here superficially placed, and can usually be exposed and tied with comparative ease and certainty.

But cases have occasionally occurred, one or two of which the writer has witnessed, in which the ligature of the axillary in the lower portion of its course has proved to be a matter of impossibility, owing to a lacerated or sloughing condition of the part, or to the excessive extravasation of blood. Under such circumstances, a departure from Mr. Guthrie's excellent rule of ligating a wounded artery at its point of injury has been warranted, and the operation of tying the subclavian or the axillary artery in its continuity in the first portion of its course, has been resorted to. Most generally military surgeons have preferred to attack the subclavian rather than the axillary above the pectoralis minor. This indisposition to attempt the ligature of the latter vessel at the point indicated is probably based on its deep-seated position, its complicated relations, and the liability of failure to reach and successfully isolate it; a failure which may occur at the hands of experienced operators. That the uncertainty of this operation is not overestimated will be evident when it is remembered that even so skilled a master in surgery as Dupuytren himself, occupied forty minutes in his search for the vessel, and only succeeded in finding it after the application of twelve or thirteen ligatures on the smaller arteries.

Before alluding to the methods usually employed to find the axillary artery in the first position of its course, it will be well to glance for a moment at its anatomical relations. It will be remembered that this vessel, the continuation of the subclavian, extends from the lower margin of the first rib to the lower border of the axilla, as indicated by the inferior margins of the pectoralis major and latissimus dorsi muscles. Its course from its commencement to its termination in the brachial is slightly curved, and the point at which it passes from beneath the clavicle when the latter is in the horizontal position is about the middle of the middle third of the bone. In its progress through the axilla the artery is crossed by the pectoralis minor muscle, which divides it into three portions; the first *above* the muscle, the second *behind*, and the third *below* it. In the first portion of its course the artery rests in a triangle, the subclavicular, which is bounded above by the clavicle, below and externally by the upper border of the pectoralis minor, and below and internally by the upper border of the sternal

portion of the pectoralis major. Externally and posteriorly to the artery rest the branches of the axillary plexus of nerves, and internally and nearer to the sternum the great axillary vein, which when distended with blood during expiration somewhat covers the artery. The cephalic vein, emerging from the intermuscular space between the deltoid and the clavicular portion of the pectoralis major muscle, crosses the apex of the subclavicular triangle and empties into the axillary vein in front of the artery. The tissues which cover the axillary artery in the first portion of its course are the skin and superficial fascia, with some fibres of the platysma-myoid muscle, the pectoralis major muscle, more especially its clavicular portion arising from the inner third of the clavicle, the costo or coraco-clavicular membrane which stretches from the upper border of the pectoralis minor to the subclavius muscle, and loose cellular tissue.

The methods laid down in the books and usually employed for the ligation of the axillary are the following :—

First, That which is known as the *ordinary* process, which consists of a straight incision parallel to and about one-half of an inch below the clavicle. This incision is continued down, the pectoralis major muscle being divided in its track until the artery is reached. The objections to this process are the limited room afforded to the search of the operator, and the obscurity which results from the hemorrhage from the vessels divided in the incision through the muscle and which are not readily tied.

Second, Hodgson's operation, consisting of a semilunar incision, convex downwards below the clavicle, involving about the same extent of surface as the ordinary process. This method answers well enough on the cadaver, but on the living subject it would probably not sufficiently uncover the vessel to permit of its ligation with certainty. It would, moreover, be attended with considerable destruction of the muscle, and with hemorrhage from the smaller vessels.

Third, Lisfranc's operation. This surgeon advised a single incision directly over the interstice between the two portions of the pectoralis major muscle, the incision to be continued down through this interstice until the artery be found. As this procedure affords but scanty room for the operator's manipulation even on the cadaver, it would be scarcely advisable to attempt it upon the living patient.

Fourth, Chamberlayne's operation. This consists of a double incision, one horizontal and parallel to the clavicle, and the other passing from the outer angle of the first, along the muscular interspace existing between the deltoid and pectoralis major. By raising the flap thus exposed, the axillary artery can be reached below the pectoralis minor muscle.

Fifth, Keate's operation, in which an incision is made directly over the vessel obliquely outwards and downwards from the middle third of the clavicle. This process would appear to be open to the same objections as Lisfranc's operation, although to a less degree.

All of the procedures above alluded to for the ligation of the axillary artery in the first portion of its course, appeared to the writer to be from some cause or other objectionable and scarcely applicable upon the living subject. He therefore determined, early in the late war, that should he meet with a proper case for the ligation of the first portion of the axillary artery, he would avail himself of the method devised and published by Professor Pancoast, of Philadelphia.[1] From frequent practice upon the cadaver he felt assured that the operation of Pancoast could be readily performed with almost an absolute certainty of finding the vessel at the desired point without injury to the great nerves and veins, and without undue laceration of the soft parts. An opportunity for the performance of this operation presented itself to him in the summer of 1863, and as he has recently been informed by Dr. Pancoast that this was the first application upon the living subject of his process, the outlines of the case are herewith submitted.

M. H., a soldier, about thirty years of age, was wounded in the middle of the left arm, by a cylindro-conoidal bullet, during the first day's fight at the battle of Gettysburg. The arm was amputated on the field, just below the insertion of the pectoralis major. Two or three days subsequent to this operation the patient was admitted into one of the temporary hospitals established in the town of Gettysburg. Shortly after his admission the flaps sloughed to a considerable extent, and slight secondary hemorrhage occurred, which was arrested by pressure on the axilla. About the eighth day after the amputation the secondary hemorrhage recurred. An attempt was made by the medical officer in charge to ligate the axillary artery low down in the axilla, but owing to the disintegrated condition of the soft parts, and the local extravasation of blood, the effort was unsuccessful. The bleeding was then partially checked by renewed pressure in the axilla.

At this time I was first called in to see the patient. Much blood had already been lost; the condition of the soft parts on the inside of the arm, and in the lower part of the axilla was extremely bad. I did not consider it advisable to attempt further operative interference on the parts already implicated. As no time was to be lost I decided to ligate the axillary artery in the first portion of its course, according to the method proposed by Dr. Pancoast. The patient was accordingly laid upon his back, and the stump of the arm was carried outward by an assistant. An imaginary line was then drawn from the sterno-clavicular articulation to the lower border of the insertion of the pectoralis major muscle, so as to determine the position of the interspace between the clavicular and sternal portions of this muscle. Along this line an incision about four and a half inches long was made through the integuments, commencing about one inch external to the sterno-clavicular articulation. The interspace between the sternal and clavicular portions of the muscle, which was readily distinguished, was next opened with the handle of the knife, and the fascia on the posterior surface of the muscle was divided on a director. The fibres of the muscle were then relaxed by bringing the stump toward the body. An assistant was then directed to insert the forefinger of each hand beneath the clavicular portion of the muscle, pushing his fingers up as far as the

[1] "Treatise on Operative Surgery," Philadelphia, 1846, p. 58, &c.

clavicle. He was thus enabled to grasp and compress between his fingers and thumbs the muscle and integuments, which were then divided up to the centre of the clavicle by an incision perpendicular to the course of the muscular fibres. The space resulting from the incision and the consequent retraction of the divided ends of the muscle, was amply sufficient to allow the search for the vessel being conducted with certainty and rapidity. The hemorrhage, which was inconsiderable, was arrested by a single ligature before the divided muscle was released from the assistant's grasp. The strong fascia which stretches from the pectoralis minor to the subclavius was next raised with the forceps and carefully torn across, and the cellular tissue beneath gently broken up above the origin of the acromio-thoracic trunk. The axillary artery, which was feebly pulsating, was then readily isolated, and a ligature was thrown around it with the effect of instantly arresting the hemorrhage from the stump. The cephalic vein was not exposed during the steps of the operation, although by close examination its location could be discovered; but neither it nor the axillary vein, which latter slightly overlapped the artery, were loosened from their cellular connections.

It should be here observed that in this operation the position assumed by the surgeon is important. He should stand, as was done in this case, above the patient's shoulder, and operate from above downwards. If he should stand below the shoulder he would instinctively, as it were, work towards himself, and most probably endanger the cephalic vein, if indeed he should not fall below the axillary vein. The writer has so often observed these results in operations upon the cadaver, in which the manipulator has stood in the objectionable situation, that he is led to regard the position which the operator should hold to his patient as a matter not to be overlooked.

The operation above described occupied certainly not more than three minutes in its performance, and was attended with no difficulty whatever. The exposure of the deep-seated parts by the second incision was complete, and the vessel was readily arrived at, and easily isolated without prolonged search or injurious handling of the parts. Nor were the large veins and nerves subjected to the contact of instruments or of the fingers.

It is to be regretted that the writer cannot add to the foregoing account a statement of a successful issue to this case. Unfortunately the result was otherwise. The patient did well for ten or twelve days, but eventually died of hemorrhage from the axillary artery at the point of ligature, occurring at the time of the separation of the thread.

The untoward result in this case does not, however, militate against the feasibility of the operation, which would appear to offer incontestable advantage over all of the ordinary processes for the ligation of the axillary artery in its upper portion; and which must unquestionably be attended with less risk to life than the operation for the ligature of the subclavian.

ART. XI.—*Successful Resection of both Bones of the Forearm, for Ununited Fracture of long standing.* By SAMUEL J. JONES, A. M., M. D., Surgeon U. S. Navy.

CHARLES DONALD, aged 43, mariner, constitution good, received a fracture of the radius and ulna of his left forearm, produced by the fall of a spar in New Orleans, in March, 1864. The fracture was dressed at that time, but bony union did not follow. After the accident, the mobility continued to be so great at the seat of injury—the junction of the middle and upper thirds of the forearm—that an effort to hold the forearm in a horizontal position was attended with marked inclination of the limb, below the seat of injury. Every attempt to use the limb caused it to become swollen and painful, thus preventing him from engaging in any employment.

Fifteen months after the original injury, I first saw the patient, and found the condition described, and at least one inch of shortening in the forearm. By making an H incision on the dorsal aspect of the forearm, one incision being made lengthwise over the radius, and another over the ulna, and uniting the two by a transverse one made at the points of the fracture, the parts were exposed, showing that firm ligamentous union had taken place, binding down the ends of the bones. The fragments had been prevented from uniting by the interposition of muscular fibres, around which the ligamentous bands had accommodated themselves. The fracture was an oblique one, and the lower fragments were over-riding the upper, thereby causing the shortening. The ligamentous bands were divided in the operation, and the fragments that had become rounded at the ends, were removed by means of a chain-saw, so as to bring the square surfaces in apposition, which left the arm still about one inch shorter.

The hemorrhage was very slight and the wound was closed with interrupted stitches, and an internal and an external splint applied; the latter having a rectangular opening left at the point of incision to dress the wound. Cold water-dressing was applied.

It soon became apparent that those splints did not accomplish the desired object of keeping the ends of the bones in apposition, and Passed Assistant Surgeon William C. Lyman, U. S. Navy, suggested the use of a modification of the ordinary fracture-box, in which the forearm should be supported by means of adhesive plaster secured to the outside of the box, and descending two-thirds of the distance to the bottom on the inside, and both bones kept in a vertical position, by packing each side of the forearm with charpie. This packing could readily be graduated as occasion demanded, and the adhesive-strips afforded sufficient support for whatever pressure was made, and the temperature was easily regulated by moistening the charpie with water at the temperature desired. The limb did not reach to the bottom of the box by an inch or more, and the dripping resulting from any excess of discharge or too free use of the water-dressing, was prevented from running out of the box into the patient's bed, by means of pieces of lint or other absorbing substance placed in the bottom of the box, and readily removed, whereby the dressing was rendered very clean and neat as well as very cool. Two difficulties were, however, encountered. The strip of adhesive-plaster at the point where the ends of the bones were in apposition, seemed to press too directly on them, making an acute angle in the ulna, instead of allowing it to lie horizontally. This was remedied by placing a splint on the strips, on which the forearm rested throughout its length.

The second difficulty was to give to the box sufficient motion to prevent movements of the body from displacing the fragments, if those movements were sudden, as was the case whilst the box lay on the bed by the side of the patient. This was remedied by suspending the box from a point higher than the patient, who raised or lowered the box himself at will. Thus after a few weeks he could rise from his bed and occupy a chair by his bedside, by simply shifting the suspending cord to the desired height.

The arm was kept in the box for eight weeks, and on its removal therefrom, it was found that the union was sufficiently firm to prevent dropping of the hand when the arm was held in a horizontal position as it had done before, but the union was again only ligamentous.

After allowing about a month to elapse for the patient to recover from his confinement, the original incisions were reopened, and the ligamentous bands with less than one-fourth of an inch from each fragment of the bones removed, again bringing the flat surfaces in apposition, and firmly securing them there by means of silver wire. The forearm was then again placed in the fracture-box, and treated as in the first operation. At the end of eight weeks it was removed from the box, and supported for a short time by a temporary splint, the incisions having closed except where the twisted wires were projecting.

On my detachment from duty at New Orleans, the case was left in charge of Dr. Heber Smith of that city, who subsequently removed the wires by untwisting them and forcibly drawing them out. He reports that in December, six months after the first operation, and twenty-one months after the original injury, the openings had finally closed, and osseous union had taken place in both radius and ulna, giving the man a quite useful arm, though nearly one and a half inch shorter than the other. The displacement of the fragments from the time the injury was received caused the muscles of the forearm to adapt themselves to the change, and the absorption caused thereby left the muscles in proportion to the length of the bones remaining, which proved to be an advantage.

The dressing used in this case commends itself for its cleanliness, for the ease with which it can be applied and changed, and for the convenience with which pressure can be graduated as desired. It seems applicable to all cases in which the fracture-box is ordinarily used.

During the eight weeks that the limb was each time in the box, it was only necessary to change the adhesive strips once, except the one strip at the point of the transverse incision where the discharge was greatest, all the strips adhering firmly to the wood until removed.

ART. XII.—*Efficacy of Persulphate of Iron as an Hæmostatic.* By W. A. WETHERBY, M. D., of New York.

Two very marked cases of the efficacy of Monsel's salt as a styptic have recently come under my notice, one of which suggested, I believe, a new use for this article. I present the results of my observation and experience in the hope that they may prove not altogether unacceptable.

CASE I. On March 3d, of the present year, Dr. S. T. E. Beck, of No. 40 Bond Street, New York, and myself were suddenly called in the case of

Mr. M. S., the well-known musical agent and manager, upon whom one of the most skilful surgeons of this city had, a few hours previously, performed the operation of excision of the tonsils in a very satisfactory manner, and with apparent safety to the patient; excessive hemorrhage in such cases being of rare occurrence. On our arrival, however, the blood was flowing at a very rapid rate; and, judging from appearances, the patient, who already had begun to show signs of syncope, had lost some forty or fifty ounces. We procured a drachm of Monsel's salt as soon as possible, and with a moistened probang covered with the powder touched the bleeding parts.

The effect was almost instantaneous: but lest there might be a recurrence of the difficulty, we dissolved the remainder in water, to be used as a gargle. The further management of the case was, as usual, very simple, and not a drop of blood flowed from the parts after the first application.

CASE II. This case is more singular in many of its features, and may, perhaps, suggest a more extended use of this preparation than has heretofore been made.

During the night of April 25, 1865, I was called, perhaps more to fulfil the requirements of decency than from any confidence in the efficacy of my services, to visit Dr. L. N., of this city, who was suffering from an alarming attack of hæmoptysis, which had failed to yield to the more usual remedies, as lead, opium, &c. It had been preceded for several weeks by a severe cough, profuse, purulent expectoration, extreme emaciation, and, in fine, by all the symptoms incident to that slow but sure destroyer, consumption. The patient himself was aware of his condition, and had lost all hope of recovery, but begged me at least to make an effort to prolong his life for a few hours that he might dictate some last bequests to his friends abroad. Emboldened by my previous success with the article, and reflecting that all the usual legitimate preparations had failed, I sent for some *persulphate of iron*, very dry, and reduced to an impalpable powder. A small quantity of this was administered by *insufflation* into the lungs every hour during the remainder of the night and the following day. The success in arresting the hemorrhage was *perfect*, and encouraged by this, I was induced to experiment still farther in correcting the discharge of matter from the lungs. Directing its use in the same manner, though with less frequency, for some time, and assisted by the action of general remedies, I soon had the satisfaction of seeing my patient leave his bed, his room, and in a short time, his house; and now, in a few months afterwards, he is prosecuting a large and successful practice in his profession, subjecting himself to all its arduous duties with no inconvenience or ill health.

I merely submit these facts as hints to the profession to examine more fully into the uses which this preparation may be made to serve.

September, 1865.

ART. XIII.—*Arterial Hemorrhage Treated by Compression.* By ELI D. SARGENT, M. D., U. S. Navy.

E. H. S., mate on board the U. S. S. "Chocura," aged thirty-one years, native of New York, while the vessel was lying in Tampa Bay at 7 A. M., February 22, 1866, accidentally inserted a pocket-knife blade

three-fourths of an inch in width and three inches in length, in his left thigh three and three-fourths inches upwards and inwards from the upper border of the patella, and two and three-fourths inches inwards from the middle of the rectus femoris muscle. Direction of the wound towards the centre of the femur, consequently towards the upper portion of the popliteal artery. He states that he distinctly felt the point of the blade against the bone, and that upon withdrawing it a jet of blood the size of the wound was thrown against his breast, he being in a sitting posture.

My steward being at hand immediately applied compression, and when I reached the patient a few moments after the accident, a tourniquet had been applied to the middle third of the thigh so as to partially control the hemorrhage, but arterial blood was still flowing in faint jets. The patient was in a state of partial syncope and evidently much alarmed. Another tourniquet applied over Scarpa's space reduced the bleeding to dropping, which was perhaps venous blood, but as it had not ceased at 7.30 A. M., a compress saturated with liq. ferri persulphas and a firm bandage were applied. At 8.30 A. M. dropping entirely ceased. At 11 A. M. the bandage dry and adherent, and time having elapsed for the formation of a coagulum sufficient to offer some little resistance to the flow of blood I ventured to cautiously loosen the tourniquets. This was repeated every hour, and at 2 P. M. the last tourniquet was removed without causing hemorrhage. The lower portion of the limb now showed symptoms of the re-establishment of the circulation. The patient was kept perfectly quiet in a cot, with the limb elevated and closely watched.

February 27. No recurrence of hemorrhage; limb allowed to be moved about in the cot. Patient complains of deep-seated pain referred to the femur.

March 2. Removed bandage and compress; no hemorrhage; no marks of suppuration; the wound is partially united by first intention; a firm fibrinous clot fills the remainder of the deep narrow incision; ordered poultices applied.

5*th.* Complains of headache and shows signs of slight prostration. Ordered pills of the sulphate of quinia and iron, five grains each, one to be taken three times a day before eating for three days.

7*th.* Much improved.

11*th.* Commences to sit up, but still complains of pain, now referred to the knee. Clot is gradually exuding.

13*th.* Still complains of pain and numbness in the affected limb.

19*th.* Wound completely closed; a small tumefaction the size of an almond can be felt beneath the seat of the injury; I cannot detect in it any symptoms of aneurism; strength increasing; is allowed to go to duty having been on the sick list twenty-five days.

23*d.* I examined the limb and found that the tumefaction had almost or entirely disappeared. So much weakness still remained as to cause slight limping, especially after long standing or walking.

This case I consider exceedingly interesting in showing to what extent compression may sometimes suffice to arrest hemorrhage which might at first be thought to demand the application of a ligature. At the time of the accident I determined to apply ligatures at the seat of the injury rather than risk recurrent hemorrhage which might supervene upon ligating in Scarpa's space. Fear of causing inflammation of the knee-joint by an

extensive incision in the vicinity of that articulation together with certain peculiarities of the circulation counterindicating the exhibition of anæsthetics at the time, led me when the hemorrhage ceased to defer an operation until its recurrence should make its necessity imperative.

As the result shows, this did not recur, and my most sanguine expectations are exceeded by a recovery without aneurism or any permanent unfavourable sequelæ.

U. S. S. CHOCURA, PENSACOLA BAY, FLA., March 26, 1866.

ART. XIV.—*Case of Dislocation of Fifth Cervical Vertebra.* By C. C. GRAY, Asst. Surgeon U. S. A.

ON the morning of Feb. 10, 1866, I was called to see private John Frank, Co. B., 2d U. S. Infantry, who was reported "badly hurt by a fall." I found the patient, a muscular powerful German of 35, lying upon a table in the company kitchen; his face pale, respiration sighing, pulse slow and full. From himself, and from those about him, I gathered the following particulars relative to the accident. About ten minutes before, he had invited the bystanders to witness a gymnastic feat.

A few yards away the ground was thickly littered with short straw, which had been emptied from bedsacks. Starting towards this straw, he ran a few steps, and bounding two or three feet into the air, attempted to throw a somersault without touching hands or head. Although accustomed to perform this exploit, he from some cause failed upon this occasion. Instead of alighting upon his feet, his head struck the earth or rather straw, and he rolled over upon his side, and lay motionless. As he did not arise, his comrades approached, and found him in the condition mentioned above.

Upon examination, I found that sensation and power of motion were alike wanting from the neck downward. The walls of the chest were motionless, and respiration was effected by the diaphragm alone.

He was unable to raise the head, but moved it freely from side to side. In attempting to examine the neck, it was necessary to lift the head from the table, which movement caused so much distress that I was obliged to desist. I, however, discovered—as I thought—a slight but unusual depression immediately below the spinous process of the fourth or fifth cervical vertebra.

The patient was conveyed to the regimental hospital, and placed upon a hard mattress, all pillows having been removed.

Asst. Surgeon S. H. Hornor, U. S. A., saw the case with me, and together we endeavored to ascertain the nature and extent of the injury. By carefully supporting the head, the patient was turned partially upon his side, and a clear view obtained of the posterior parts of the neck. The examination was very unsatisfactory, for so thick were the layers of muscle and fat, that the usual landmarks, the spinous processes, were indistinct, and we were unable to arrive at a positive diagnosis. It was clear, however, that there was an abnormal gap or depression between the spinous

processes of the fourth and fifth, or fifth and sixth cervical vertebræ; that pressure at this point of depression gave slight pain; that there was an absence of crepitus, and that the movements of the head upon the atlas, and of the atlas upon the axis, were such as to prove that these articulations were not involved. Respiration indicated that the lesion, whatever its nature, was below the origin of the phrenic nerve, while the total paralysis of the upper extremities could not be explained on any other theory than that of injury higher than the origin of the brachial plexus. It was further agreed that we were not likely to benefit the patient by attempting to rectify a distortion, concerning the nature of which we were ignorant. From this time forth he was accordingly undisturbed. My function consisted in directing such small attentions as were possible in the case, and in watching the process of dying.

He lay, as before stated, perfectly supine, breathing by the diaphragm; suffered no pain, and was able to swallow small quantities of fluids. His pulse, which immediately after the accident had been 78, in two hours had fallen to 72. Respirations 20 per minute.

Remained in this condition during the day. In the evening about three ounces of turbid urine drawn off by catheter. On the morning of the 11th, the pulse was 65; respirations 23 per minute. Somewhat drowsy and dull, but perfectly rational and cheerful. Countenance dusky from venous congestion. Liquid food had been twice administered. Urine (six ounces) again evacuated by catheter, and tested, giving a strong acid reaction. In evening, pulse 62; respirations as before; face livid. Four ounces of urine evacuated and tested, giving same result as before.

Died quietly at 6 A. M., Feb. 12th, forty-four hours after injury.

Autopsy five hours after death.—Rigor mortis imperfectly established; suggillation general over posterior portions of body; ulceration had already commenced over sacrum. The lower and back part of neck exhibited tumefaction—slight, yet sufficient to obliterate the depression which had been felt during life. The whole of the cervical portion of the spinal column was exposed by dissection, revealing a dislocation backwards of the fifth cervical vertebra. Both the superior articulating processes of this bone looked directly backwards, and its bifid spinous process was astride of and locked fast upon the neck of the spinous process of the sixth. So perfect was this impaction, that the spinous processes of the fifth and sixth could only be felt as one, until after all the soft tissues covering them had been dissected away. The luxation was "symmetrical" in respect to lateral displacement. Of course, there was a wide interval, one and a half inches between the spines of the fourth and fifth vertebræ, which interval constituted the depression before mentioned.

There was no fracture of the body, pedicles, or laminæ of the displaced bone, but on the right side a small fragment of the anterior tubercle of the transverse process had snapped off.

The subflavan and capsular ligaments between the fourth and fifth vertebræ had given way, as had also the attachment of the ligamentum nuchæ to these bones. The anterior and posterior common ligaments were unruptured.

There was a slight extravasation of blood external to the sheath of the spinal marrow, and a considerable quantity between the sheath and the cord. The upper and posterior edge of the fifth cervical vertebra encroached to such extent upon the spinal canal that the cord at this point was bent at an abrupt angle, and its antero-posterior diameter reduced more than half.

The meninges of the cord were not torn, nor was the cord itself lacerated; which may perhaps be explained by the fact that the wide separation of the bones allowed it (the cord) to bulge out posteriorly and thus escape.

The lungs were congested but crepitant throughout; the air-passages filled with frothy mucus; the heart healthy, empty, and well contracted.

The cervical vertebræ were removed entire; the dislocation unreduced. The specimen has been deposited in the Army Medical Museum (Museum Number 549).

I have been unable to find a record of a similar case. So unique a dislocation could only result from a very complex "composition of force and resistance."

CRITTENDEN BARRACKS, LOUISVILLE, KY., April 26, 1866.

ART. XV.—*Successful Removal of both Ovaries.* By A. REEVES JACKSON, M. D., Stroudsburg, Pa.

SARAH T., aged forty-seven years, unmarried, applied for relief November 25, 1862. She commenced menstruating at the age of seventeen, and the function has always been regularly and painlessly performed. Six or seven years ago, after having taken a severe cold, she felt a sensation which she compared to the occasional slow dropping of water in the region of the bladder. Shortly after this she discovered that the lower portion of her abdomen was enlarged, and that the increase was greatest on the left side. She also felt, indistinctly, a tumour about the size of a small orange in the same locality. In a single night the whole of this enlargement, including the tumour, spontaneously disappeared. However, it soon returned, and she has since been increasing gradually in size. Her complexion is dull and sallow, appetite good, bowels regular, although latterly she has experienced some difficulty in defecation, and also in urinating. The abdomen measures forty-one inches in circumference; is very greatly and equably distended, and distinctly fluctuating, the fluid evidently encysted. No solid tumour is discoverable through the abdominal walls. The left leg and foot are œdematous.

A vaginal examination reveals a hard, smooth, inelastic tumour, immovable or nearly so, completely filling the cavity of the pelvis. The os uteri circular, and with soft lips, is distinguished with some difficulty. An attempt to introduce the sound is unsuccessful, the instrument appearing to meet with some obstruction immediately after entering the os.

Various remedial means were used without relief, and the oppression of the breathing, the swelling of the lower extremities, and other symptoms dependent upon the distension of the abdomen having become insupportable, tapping was decided upon, and performed January 1, 1863, with great and immediate relief to the patient. The fluid removed was glairy, of a pale straw colour, somewhat tenacious, and measured forty-three pints. After its withdrawal the outlines of a solid tumour, occupying the lower portion of the abdomen and extending as high up as the umbilicus, were clearly distinguished, the greatest bulk being apparently on the left side. It was slightly movable, smooth, imperfectly globular, and without evident fluctuation.

The patient remained comfortable several weeks, but the abdomen again became distended, and tapping was repeated December 24, 1863. She was subsequently tapped several times, the intervals between the operations becoming each time shorter, and the last operation being done July 27, 1865.

The patient's general health now began rapidly to fail, and after having the dangers of the operation fully explained to her, she concluded to submit to ovariotomy.

The operation was performed October 31, 1865, in the presence and with the assistance of Drs. Bond, Bush, Barnes, Welling, Davis, Williams, Walton, and Mr. Van Buskirk, medical student. The patient having been well purged in the morning by an ounce of castor oil, was placed upon a narrow table, the nates brought near to the lower end, and her feet resting upon a chair without a back. Everything being in readiness, she was put under the influence of an anæsthetic mixture composed of one part chloroform and two parts of sulphuric ether by measure. An incision four inches in length was made in the linea alba, commencing one inch below the umbilicus, and extending directly downward. This was gradually and cautiously deepened with the view of exposing and tapping the cyst and removing its fluid contents through the canula. The design was frustrated, however, by the knife suddenly entering the cyst and giving exit to sixteen pints of a gelatinous, whitish fluid. In order to facilitate the evacuation of the latter and to guard against its entrance into the peritoneal cavity, the patient was turned completely on to her right side. The cyst having been emptied, it was ascertained that its walls were adherent to the peritoneum at the place of incision, and it was with very great difficulty that the adhesions could be sufficiently broken down to enable the hand to be introduced in order to learn the further condition of the parts involved. When this was finally accomplished it was found that there were two tumours entirely distinct, the one arising from the right, and the other from the left side. The one on the right side was a unilocular cyst with thickened walls, firmly adherent to the mesentery, omentum, intestines, and to the abdominal surface of the peritoneum. It was now empty and collapsed, and was maintained in its position by means of these numerous attachments.

The other, arising from the left side, was hard, firmly adherent to the peritoneal surfaces of the left abdominal and pelvic walls, and to the posterior and left sides of the fundus of the womb. The incision in the abdominal walls having been made sufficiently large, the attachments of the tumour were carefully separated by means of the fingers aided occasionally with the handle of the scalpel. The tumour was then lifted through the opening, and a clamp having been placed firmly upon the pedicle, the tumour was separated and removed. The pedicle, which consisted of the broad ligament of the uterus, was not more than one inch in length, about the thickness of a finger, and somewhat flattened. The empty cyst of the other tumour was next cautiously separated from its many attachments and drawn away. Its pedicle, which also consisted of the broad ligament, was about four inches wide, two and a half inches long, and traversed by large vessels. A clamp was placed upon it, and it was then cut close to its attachment to the tumour. The cavity of the abdomen was next carefully cleansed by means of newly prepared sponges and warm water, and the upper portion of the wound drawn together and retained by means of hare-lip pins and sutures, care being taken to bring the peritoneal surfaces

accurately in contact. The clamps being found to interfere very greatly with the approximation of the edges of the lower portion of the wound, owing to the shortness of the pedicles, it was decided to remove them, and this was accordingly done after previously securing the pedicles by strong ligatures applied beneath the clamps.

The remainder of the wound was then closed by iron-wire sutures and harelip pins. The pedicles, being drawn out by their ligatures, were transfixed by large harelip pins passed also through the edges of the wound, and thus kept on the surface of the abdomen. The stumps beyond the ligatures were freely touched with a solution of persulphate of iron. Strips of adhesive plaster were then placed across the abdomen, and a folded piece of muslin dipped in warm water laid over the part. A flannel bandage pinned around the body and kept in position by means of perineal straps completed the dressing. The patient was now removed from the table and placed in bed. Two teaspoonfuls of elixir of opium were given her, and as she appeared somewhat prostrated, some brandy and water were also administered.

Ten o'clock P. M., complains of great thirst and some pain in the abdomen. Pulse 100, full, tense. Empty the bladder with the catheter, and give two teaspoonfuls of McMunn's elixir of opium. Enjoin strict rest, and allow ice held in the mouth to quench thirst.

Sept. 1, 9 A. M. Has slept some during the night; pulse 112; tongue slightly furred; complains of thirst, and slight pain in the abdomen; introduce catheter; allow ice and toast-water. 10 P. M. Still has slight pain; empty bladder.

2*d*, 6 A. M. Expresses herself as feeling very well. Thinks she is able to get out of bed. Pulse 112; empty bladder. Allow ice and toast-water, with a small quantity of cream added to the latter. 12 M. Has been sleeping, feels quite comfortable; pulse 98. Give two teaspoonfuls elixir opium. 3 P. M. Has been sleeping; pulse 108; empty bladder. 12 midnight. Comfortable; emptied bladder.

3*d*, 10 A. M. Slept some during the night; pulse 90; comfortable, and has less thirst. Examine the wound for the first time. It looks well, and the union of the edges appears to be perfect, except at the point where the stumps of the pedicles protrude; the latter appear shrunken and blackened. Apply fresh compresses wrung out of warm water; order weak chicken-water as diet, and ice to allay thirst; empty the bladder. 5 P. M. Pulse 100; has been sleeping, and feels well; tongue slightly coated with a whitish fur, a condition which has been present from the first; has taken the chicken-water several times with enjoyment. 12 midnight. Comfortable. Dress the wound, and give two teaspoonfuls elixir opium.

4*th*, 9 A. M. Pulse 104. Make an entire change of clothing without raising the patient from the bed. The stumps of the pedicles not being removed, apply a flaxseed-meal poultice over that portion of the wound. Order chicken-water with rice, empty bladder, and give full dose of opium. 5 P. M. Comfortable; introduce cathether. 12 midnight. Empty bladder, and give full dose morph. sulph.

5*th*, 8 A. M. Complains of pain and tenderness in both iliac regions; pulse 100; says the morphia acted unpleasantly, and did not produce sleep. Empty bladder; ordered flannels wrung out of hot water to be kept constantly applied to the abdomen. 1 P. M. Pulse 108; has less pain; appetite good, and takes the broth with great relish. Wound looks well; no

swelling of the abdomen. 12 midnight. Comfortable. Empty the bladder; give full dose of opium.

6*th*, 10 A.M. Did not sleep well last night, but feels cheerful this morning. Dress lower portion of wound, and apply lard to the sutures and pins at their points of ingress and egress; empty bladder; order the quantity of nourishment to be increased. 5 P.M. Has been sleeping soundly, and feels very comfortable; pulse 92; appetite good; no tenderness of the abdomen on slight pressure. Introduce catheter. 12 midnight. Dress lower end of wound; some of the ligatures on the pedicles are loose; empty bladder; omit the opium.

7*th*, 9 A.M. Pulse 84; has slept well. Dress lower end of wound; introduce catheter; order 1 oz. castor oil, and permit the head and shoulders to be somewhat raised 4 P.M. The castor oil has produced three copious evacuations without pain. Dress the lower portion of the wound, and remove two of the sutures; introduce catheter. Patient able to move in any direction without pain. Change her clothes and the bedding; afterwards administer a small quantity of brandy. 12 midnight. Not quite so well; the bowels have been moved three more times, occasioning weakness; pulse 88. Empty bladder; dress the wound; give a full dose of opium.

8*th*, 9 A.M. Pulse 100; bowels quite loose, and patient feels weak. Dress lower end of wound, and remove one harelip pin; give a cup of strong black tea; introduce catheter. 1 P.M. Bowels have acted four times since last visit. Fearful that such excessive peristaltic action may induce peritonitis; introduce a suppository of morphia into rectum. 4½ P.M. Has been sleeping; pulse 88; bowels quiet since last visit. Empty bladder; order a bowl of strong broth with rice. 12 midnight. Pulse 100; bowels open twice during the evening. Introduce morphia suppository; empty bladder.

9*th*, 9 A.M. Feels better this morning; pulse 96; bowels not moved since last visit; has had some nausea and vomiting; has taken some coffee and cracker this morning with relish. Dress lower end of wound, and empty bladder. 5 P.M. Pulse 92; bowels moved once. Remove one of the pins that had been passed through the pedicles; introduce catheter. 12 midnight. Pulse 88; feels somewhat uncomfortable from having eaten too freely. Empty bladder; remove two of the wire sutures, and the pin transfixing the other pedicle.

10*th*, 9 A.M. Feels unusually well; got out of bed this morning and sat on a chair twenty minutes, and emptied the bladder by her own effort; is quite bright and cheerful; pulse 80; a small quantity of fetid pus is discharged when pressure is made on the side of the wound, at the point where the pedicles emerge. 6 P.M. Pulse 80; has been out of bed again to empty the bladder.

11*th*, 9 A.M. Pulse 76; everything going on favorably. Dress wound carefully, and remove the remainder of the pedicle ligatures. Has been up twice to urinate. 10 P.M. Pulse 72; bowels moved once; appetite excellent; has been up four times during the day.

12*th*, 9 A.M. Dress the wound. Patient feels quite well this morning. 6 P.M. Still improving; pulse 72; there seems a slight tendency to diarrhœa. Order a morphia suppository.

13*th*, 9 A.M. Much better. Dress the wound, which is rapidly healing.

From this time the patient continued to improve. At the end of three weeks she left her room and walked down stairs. Her recovery was unin-

terrupted, and at this time (April 16, 1866) is in as good health as at any former period of her life.

Remarks.—I make no apology for detailing the foregoing case so fully, for I apprehend that success in ovariotomy, as in other large surgical operations, frequently depends in very great measure upon attention to the *minutiæ* of the after-treatment. And, wherever it is practicable, I would recommend that the operator himself, in so far as may be possible, superintend the management of the case. The reasons for this advice are sufficiently obvious. Others may do well—friends may furnish such attentions as are always pleasant to the invalid, and skilled attendants may perform every duty—but there is none who feels a more intense anxiety for the recovery of a patient than he who has jeopardized that patient's life in order to preserve it.

ART. XVI.—*Tubercular Tumour of Brain.* By M. L. MEAD, M. D., of Albany, N. Y.

THE following case is reported with the belief that it will be valuable as a contribution to the literature of organic diseases of the brain.

On the 9th February, 1866, I saw Mrs. B., 47 years old, the mother of three children, the youngest 21 years old. I found her suffering from convulsions of the muscles of the left side of the face, which occurred at intervals of about fifteen minutes, and lasted from fifteen seconds to a minute. During the interval she felt perfectly well, and did not lose consciousness during the spasm. The patient was still menstruating, but at irregular intervals. At the time of this attack she was flowing rapidly.

Three years ago she had two or three convulsions, which I regarded at the time as hysterical, in which she was for some time unconscious. Since then she had been in such health as to be able to take care of a large family of boarders. Three days before these convulsions commenced she was taken in her sleep at night with what I concluded, from her account next morning, to have been a fit similar to those of three years ago.

At first I regarded the convulsions as symptomatic of the derangement of the menstrual functions, and attempted to control them by the use of various antispasmodics, trusting that the excitement would pass over, and she would recover. In this opinion I was confirmed by the advice of Dr. Vanderpoel, and according to his suggestion I gave powders of morphia and camphor. These having no control over the convulsions, except very slightly at first, on the 13th I injected sixteen drops of Magendie's solution of morphia under the skin on the left side of the neck. Four hours later I injected twenty drops. No other effect was produced than sleep during the intervals of the spasms. Meantime the parts affected by the spasms were gradually extending. The orbicularis muscle and the recti muscles of the eye were involved. The angle of the mouth, when at rest, was drawn down slightly, and the tongue when protruded turned towards the left side.

During the morning of the 15th there was nausea. A full dose of ipecac.

and antimony was given, followed by draughts of warm water. Free emesis was produced, and then full doses of morphia administered with the vague hope that the revulsion caused by the emetic, and the sedative influence of the morphia, would "break the fits." In this, as always before, we were disappointed.

I now began to suspect that it was a graver case than we had supposed. Notwithstanding the persistent use of antispasmodic and sedative medicines, we had produced not the slightest effect on the spasms. On the contrary, they were all the time becoming more frequent, more violent, and more extensive, and of longer duration. On the 16th, the left arm was convulsed.

More particular inquiry into the previous history elicited the following facts: She had for years had occasional numbness of the limbs, and strange feelings in the head, which made her think she should go crazy. Her sight at times was disturbed, with inability to read more than a few lines at a time. The action of the bowels had been irregular—constipation and looseness alternating. She had never noticed that these disturbances had any connection with the menstrual periods, which had always been regular and normal. These facts were discussed with my friend Dr. Stevens, in consultation. Here we thought we found signs of more or less disturbance in almost all the cranial nerves. The disturbed vision argued that the second pair was involved. The convulsed action of the eye showed disturbance in the third, fourth, and sixth pairs. As to the motor portions of the fifth, and the portio dura of the seventh, there was no question. After the emetic there was continued nausea at every spasm; and much of the time there had been a strange sense of fluttering of the heart during the convulsion, of which, however, we could discover no sign by the ear or the pulse. Anything affecting the eighth pair of nerves might account for these symptoms. We could not discover satisfactorily any disturbance of the olfactory or auditory sensations. In view of these circumstances we inferred that there must be some lesion at the base of the right side of the brain, in the track of these nerves.

Opposed to this theory was to be considered that she was at a time of life when we might expect a strong influence to be exerted on the nervous centres by the uterine changes; she retained perfect consciousness, and had, except for a short time, no pain in the head. Add to this that she had been suffering these convulsions so long already, with no more signs of exhaustion from the disease if it were organic; and also that the pulse throughout was soft and full, and not rapid, I think it will be admitted that the case was sufficiently obscure.

But changing my mind, as I have said, and supposing that there might be a chronic inflammation of limited extent along the base of the brain, on the 16th I put blisters on the back of the neck, and gave three grain pills of blue mass every third hour for forty-eight hours. At the end of this time the gums were slightly touched. There was no perceptible change of the symptoms certainly no improvement. On the 19th I had in consultation Drs. Vanderpoel, Quackenbush, and Bigelow. The first two agreed that the convulsions were epileptiform, developed by the uterine condition, and *that there was no organic disease.*

The following treatment was advised and followed: Bromide of potassium in scruple doses three times daily; three grain doses of valerianate of zinc in the interval, and ice to the spine. The spasms continued with no change, except that they were more frequent, recurring every five minutes and even oftener, for a long time.

On the evening of the 20th there was complete hemiplegia of the left side. The *flexor* muscles of the arm, and the *extensors* of the leg being rigidly contracted.

From this time the whole body was involved in the spasms. Her strength was very much exhausted; but yet no interruption of consciousness. She continued in this way without material change till the morning of the 22d.

In reply to inquiries by the friends whether there was any hope, and whether I could do anything more for her, I said "No." They then asked and received my consent to "try somebody else." They put her under the charge of a physician who boasted of his skill in cases of *fits*, and whose diagnosis was that *irritation of the mucous coats of the stomach* was the cause of the spasms. I learned that she died at 1 o'clock A. M. the 26th, seventeen days after the establishment of the convulsions.

Post-mortem thirty-nine hours after death, conducted by Dr. Armsby, in presence of Drs. Bigelow, Boulware, Stevens, Haskins, Northrop, and myself. Rigor mortis well marked; only the head examined. On removing the calvarium a small spicula one-eighth of an inch long was found above the right orbit, but no lesion of the brain in the part next to it.

In the anterior lobe of the right cerebral hemisphere, exterior to the posterior lobe of the *corpus striatum*, and involving a deep convolution from the surface of the brain, was found a dark-coloured tumour three-quarters of an inch long and one-half as large in its transverse dimensions. The anterior part was composed of a recent clot of blood. The posterior and larger portion was harder. On cutting through it transversely it appeared to be a tubercular formation with a granular deposit, which felt gritty to the fingers. A portion of the pathological specimen when placed under the microscope was found to consist of a number of small particles of granular matter, presenting the usual appearance of tubercle.

The tumour had doubtless been forming four or five years, and caused the symptoms described. The clot of blood might have been formed at the time of the convulsion three weeks before death, and might have been derived from vessels of the pia mater which were involved in the tumour.

ART. XVII.—*A New Remedy in Gonorrhœa.* By J. S. PRETTYMAN, M. D., of Milford, Del.

IN July, 1859, while narrowly observing the effects of oil of erigeron administered in a fearful hæmoptysis, I was led to suspect that it would prove a useful remedy in the treatment of gonorrhœa. Acting upon this presumption, I immediately commenced giving it to a patient then under my care, in whose case all the vaunted specifics had most signally failed. He improved at once, and was speedily cured. Since that date I have prescribed it in about fifty cases, with unvarying success. It arrests the discharge in about 72 hours, and effects a cure in from six to eight days. I do not recommend it as a specific in all cases, but design merely to bring it to the notice of the profession as an exceedingly valuable medicine in this disease. Of course

all scientific medical practice is based upon the well-known pathological condition of the structures involved, and this is our unerring guide. When, in recent cases, the urethral inflammation is severe, my plan is to precede the remedy with a full dose of some active hydragogue. A good formula is: R.—Pulv. senna ℈ij; pulv. jalapa ℈j; pulv. aromaticus gr. x. M. Add a gill of boiling water and a teaspoonful of sugar, and, when sufficiently cool, agitate, and swallow at a dose. As soon as this operates, give ten drops of the oil on sugar, and three hours later a full dose of spts. æther. nit. in infus. althea, and so on every three hours alternately until the urethral irritation is allayed. Then leave off the latter, and continue the oil until the cure is complete. If the case is not recent, or there is but little urethral irritation, the oil alone is sufficient.

I have used it also in combination with copaiba and other articles, and found such preparations to answer a good purpose, but no better than the oil alone.

The oil which I use is reputed to be that of the *Erigeron Canadense;* but I presume that from the *Philadelphicum* is equal, if not superior, for this purpose.

ART. XVIII.—*Gunshot Wound of the Bladder; Recovery.* By ISRAEL B. WASHBURN, M. D., late Surgeon 46th Ind. Vol. Inf., now of Star City, Indiana.

SAMUEL STUART, private of Co. B, 46th Ind. Vol. Inf., who is "temperate in all things," and enjoyed perfect health, was wounded in a skirmish near Fort Pemberton, Miss., March 11, 1863, during the Yazoo Pass expedition. The ball entered the abdominal cavity immediately above the right pubic bone near the symphysis, passing backwards and downwards through the fundus of the bladder, making its exit through the great sacro-ischiatic notch of the corresponding side. The shock was very great, but he finally rallied after the free exhibition of whiskey and morphia. The prognosis of all the surgeons present was that he would die. The urine flowed from the anterior and posterior openings at the same time, saturating his clothes and bedding. Cold water-dressings were all that were applied up to the sixth day, when he was sent to general hospital at Helena, Arkansas.

12*th day.* He is doing well; the posterior opening has closed, and the anterior is closing rapidly. I did not see him again until in June, 1864, in the Veteran Reserve Corps, at Indianapolis. He looked the very picture of health, but he said that he was troubled with shortness of breath upon the slightest exertion; otherwise he considered himself entirely sound, and wished to return to the "old regiment."

TRANSACTIONS OF SOCIETIES.

ART. XIX.—*Summary of the Proceedings of the Pathological Society of Philadelphia.*

1866. *Jan. 10th. Vesical Calculus.*—Dr. WILLIAM PEPPER presented the specimen and made the following remarks in connection with the case from which it was derived :—

William F. Williams, æt. 21, was admitted to surgical ward of the Penn. Hospital on December 4, 1865, to undergo an operation for relief of a vesical calculus. He was a native of Fredericksburg, Virginia, a locality where calculous disease appears to be of moderate frequency, and has suffered from the symptoms of vesical calculus for 17 years, or since the age of 4 years. He has been frequently sounded in past years, and the presence of a stone clearly made out ; but his parents have never been willing to have him undergo lithotomy. All of the rational symptoms usual in cases of calculus have existed here, as frequent micturition, vesical irritation referred to the end of the penis, sudden interruptions of the stream of urine, urine fetid and frequently alkaline, retraction of testicles, &c. His general health has suffered at times considerably for years past ; but during the last six months the symptoms have been growing more threatening ; he has lost flesh and strength, and although able to be about, has fallen into a condition of profound mental depression, with, probably, impairment of his intellectual faculties. He has been compelled to urinate nearly every ten minutes, day and night, and for hours would sit holding his penis with both hands, bewailing his sufferings. On admission it was determined to operate speedily for his relief. An examination of the urine showed it to be highly alkaline, containing a small amount of albumen, and depositing abundantly urate of soda with crystals of triple phosphate, considerable amount of granular matter, and a moderate number of pus corpuscles. There was tenderness on pressure over the bladder, and the penis was greatly hypertrophied from constant irritation, but there were no symptoms which did not seem fairly explicable by such long-standing cystic disease. He was sounded on Wednesday, Dec. 6th, and the existence of a calculus confirmed, and on Saturday, Dec. 10th, Dr. Morton performed the usual operation of lateral lithotomy on the left side. The stone, which was of the size of a pigeon's egg and weighed ʒv, was successfully removed, without any notable hemorrhage.

Within 24 hours after the operation the patient had a chill of moderate severity, followed by a marked hot stage and a slight sweat. Sunday night, 36 hours after operation, he had a second, and a very slight one again early on Monday morning. The wound in the perineum looked very healthy, the urine passing through it freely, and in the intervals between the chills he seemed so well that it was hoped they might proceed from malaria, and he was consequently ordered anti-periodic doses of quiniæ sulph. with moderate diet and a febrifuge mixture. On Monday, as his bowels had

not been opened for several days, an enema was administered which provoked two discharges, but was followed by slight hemorrhage from the wound. The chills were not repeated, but on Tuesday he complained severely of pain in the region of bladder, increased by pressure. There was decided tympany, but no marked tenderness over upper part of abdomen; nor were the general symptoms those of peritonitis, as the pulse was but 82, the surface inclining to be cool and relaxed, the tongue only moderately dry, and the face, though haggard, not anxious and pinched. The urine could not be collected as it dribbled through the perineal wound, but the total quantity did not seem very deficient. There was a tumour easily detectable by pressure over the pubis, which seemed to be the bladder distended; but as very little urine escaped upon introducing a catheter either through the urethra or perineum, it was attributed to suppuration in or around the walls of the bladder. The abdomen was leeched, and subsequently protected by a warm poultice, and a moderate amount of stimulus given.

On Wednesday morning symptoms of uræmia began to be developed, occasional wandering delirium with attempts to get out of bed, pulse more slow, although much weaker, surface cool, pupils moderately dilated and sluggish, occasional hiccough and vomiting. By noon on the day following, he was in a state of almost complete uræmic coma, although when pressure was made over bladder he would groan and move uneasily. He lingered in this state until 4 P. M. of Friday Dec. 16th, six days after operation, the radial and tibial pulsations being imperceptible for some hours before heart ceased to act.

Post-mortem three hours after death.—Abdominal viscera alone could be examined. Upon cutting through the abdominal walls, quite a large collection of thick yellow pus was found overlying the bladder, in part in the subperitoneal connective tissue of the abdominal wall, and in part in the connective tissue surrounding neck of bladder and lower part of the rectum. In the pelvic fascia the pus was so mixed with blood as to be grumous and sanious. The bladder was enlarged, its external surface rough from the adhering bands of thickened, tough connective tissue. Its walls were very greatly thickened, in some parts measuring three-quarters of an inch, so that the cavity was rather contracted, and in addition was encroached upon by the ruga of the mucous membrane which were thick and very deep. The mucous membrane was coated with a yellowish-gray, or in places greenish-gray, rather friable pseudo-membranous deposit, containing, in all probability, considerable amount of the urinary salts. The prostate gland was incised in an oblique direction, from above downwards and from right to left; the line of incision made a very obtuse angle, each branch being rather less than three-quarters of an inch in length. Upon dissecting out the kidneys and ureters, they were found to present very marked differences. The right kidney was of about the ordinary size, 4½ inches in length by 3 in breadth; its capsule was thickened in places, in others much thinned, and in one point perforated by an abscess which had discharged itself thus externally, infiltrating the loose fat and connective tissue with a sanious pus. The external surface of the kidney was irregular and much discoloured, and upon palpating any of the discoloured points, a distinct sense of fluctuation was obtained. Upon laying the kidney open, extensive suppuration was found to have taken place in the secreting structure of the organ. The greater part of the calyces and infundibula were destroyed with the renal structure adjacent, and then, radiating from this large abscess, there were

a number of smaller ones, involving especially the cones, and extending to the capsule of the kidney, so that with the exception of small patches of cortical structure separating these abscesses, the entire secreting structure of the organ had disappeared. These abscesses were generally round, had smooth walls, but were not lined with any distinct fibrous wall. Toward the pelvis of the kidney the parts were coated with a layer somewhat similar to that lining the bladder. The structure about the pelvis could hardly be recognized as renal by microscopic examination, consisting of a great amount of granular debris, with occasional fibrous bands, and in but very few points could the disintegrated remains of renal tubules be recognized. The field was so much cleared up by addition of acetic acid, that the tissues were probably incrusted with the urinary salts.

The cells of the most healthy parts, the remaining cortical structure, were large and granular, and the Malpighian bodies opaque and also granular. Some of the tubules were large, with their epithelium apparently loose; whilst others were narrower, with smaller and more compact cells; there were great numbers of free cells and free nuclei, with much granular matter, no marked increase of fibrous tissue and very little oil, and a few pigment granules. It seemed probable, from several examinations, that among the tubes which were largest, and whose epithelial cells were large, swollen, opaque, and granular, and either lying loose in the tube or with interspaces between each other on the tubular membrane, there was a marked tendency to be fragmentary and to have much granular matter mixed with them.

The *right* ureter was much dilated, so that about three inches below kidney its circumference was more than 1½ inch; its wall was also much thickened, and upon its inner surface, roughened and discoloured from effects of long-standing inflammation. A microscopic examination of the fluid contained in this ureter showed very numerous blood corpuscles, pus cells, a little black pigment, crystals of the triple phosphate, numerous granular epithelial cells from ureter, and a few bodies resembling fragments of granular tube-casts. There was no calculus, even of minute size, either in kidney or ureter.

In striking contrast to this almost disorganized gland, we find the *left* kidney presenting us with an equally remarkable *increase* of secreting tissue. Its long diameter measured seven inches, its transverse 3½ inches. The capsule was smooth and apparently healthy, excepting in two places where it was separated from the kidney by a thin layer of pus, the result of superficial ulceration of the cortical structure. Upon making a section of the kidney the hypertrophy was found to affect all portions of its structure, the fibrous tissue of the pelvis, infundibula, and calyces, as well as the cones and cortical portion. Its colour was somewhat lighter than normal, as if anæmic; its consistence was healthy, excepting in one place, near the upper extremity of the organ where to about the depth of three-quarters of an inch the tissue was harder and more yellowish than in other parts. Its ureter showed no sign of inflammation and was but moderately enlarged, its circumference not being one-third that of the right ureter; for about 1½ inch from bladder, however, it was more dilated than above, but at that distance there was so marked a contraction of the calibre, produced by a fold of membrane, that a match could scarcely be passed through. Microscopic examination of the left kidney showed the renal cells to be very large and somewhat granular, but with clear nuclei; the tubules also large and slightly cloudy, one of them from the cortical portion measured

$\frac{1}{210}$ of an inch in width; the Malpighian bodies were also much larger than normal. Very little oil was seen.

There were no signs of peritonitis in any portion of the abdomen. The abdominal viscera appeared healthy, with exception of the spleen, which was about thrice the normal size, quite firm, and contained ordinary elements, with a little granular pigment.

Tumours of the Larynx.—Dr. HARLAN read the following report in reference to the case communicated by Dr Ellis, November 22d, last:—With the exception of a few records of isolated cases, scarcely any attention seems to have been given to morbid growths in the larynx, until a case of successful extirpation by means of laryngotomy by Professor Ehrmann, of Strasburg, made a good deal of stir in the medical world, and the subsequent publication of his monograph (*Histoire des polypes du larynx*) in 1850, gave the subject a permanent and important place in medical literature. This work, which is a large folio with fine plates, gives descriptions of some thirty cases, and may be considered as containing all that was worthy of record in connection with the subject up to the date of its publication.

Horace Green, of New York, in his book on *Polypi of the Larynx, and Œdema of the Glottis*, published in 1852, says: "We have now collected all, or nearly all, the well-authenticated histories of this disease, and the entire number amounts to some thirty-nine or forty cases only; of these, seven or eight have been observed in our own country." In the following year, Dr. Gurdon Buck (*Transactions of the American Medical Association*) collected forty-two cases in tabular form. Dr. Green, in speaking of new formations in the larynx as a rare disease, says: "So, at least, it has been considered, and yet the author does not hesitate to express the opinion, and leave it to future experience to confirm or invalidate that foreign growths have occurred in the opening of the air passages, in many instances, when their presence was neither suspected nor discovered; and that if the attention of the profession should by any means be directed to this subject, it will be found that the existence of polypus and other excrescences in these passages is an occurrence taking place much more frequently than has been supposed by medical practitioners." The attention of the profession has since been directed to the subject by means of the laryngoscope and the more active and general interest in diseases of the throat, and the above opinion has been most amply confirmed.

Czermak, in some "Observations on Tumours of the Larynx" (*Med. Times and Gazette*, June 7, 1862), says: "Three years ago I published the first diagnosis of laryngeal polypus made by means of the laryngeal mirror, and since then I have so often made similar laryngoscopical discoveries, that in my pamphlet on the laryngeal mirror, I was able to enunciate the proposition that such pathological alteration occurs much more frequently than has been hitherto believed. With the rapidly spreading use, however, of the laryngeal mirror, the cases of new formations in the larynx multiplied to such a degree that some of the leading authorities 'could not repress a fear that laryngoscopy at present overrates the frequency of new formations in the larynx, and describes every swelling that exists there as a new formation.' * * * * Though unable to answer for the assertions of other observers, who have confirmed the facts I have pointed out, though not wishing to deny the possibility of errors by hasty and insufficient examinations, and in spite of the contradiction in which my above-quoted proposition finds itself with the previous experience of surgeons and pathological ana-

tomists, I must maintain its absolute validity against all objections. If we were to eliminate as doubtful or inaccurate a great part of those observations on laryngeal polypi which have been recorded since I introduced the laryngoscope, still there would remain a mass of unimpeachable and rigidly demonstrated observations. * * * * I here repeat that the fact of the greater frequency of new formations in the larynx, first declared by myself and confirmed by the observations of Von Lewin and others, must be admitted as universally as it has been hitherto universally held that these pathological formations are amongst the rarest of morbid alterations in the larynx."

In the Transactions of the London Pathological Society (from 1848 to 1864) there are records of more than thirty cases of tumours of the larynx, beside a number of cancerous growths, in many of which other parts were involved, and which seem hardly to belong to the present subject; and I have met with so many cases in the transactions of societies, monographs, and lectures on the laryngoscope, &c., that I have given up in despair my intention to collect them.

An interesting point in the consideration of this subject is the means and the prospect of surgical treatment. In his monograph on the *Throat and Windpipe*, published in 1860, Gibb recommends that tumours of the larynx should be "got rid of by opening that cavity," as "it is wholly out of the question to effect their removal through the glottis," and adds, "We have the experience of several accurate observers to show that the larynx may be freely opened and such tumours removed with the most perfect safety." He acknowledges, however, that "it must be confessed, that tumours and polypi of the throat and larynx offer a wide and complicated field for study." He has himself been one of the most active workers in this field, and among the first to demonstrate the incorrectness of his statement in reference to the possibility of operating through the glottis. The famous case of Ehrmann, previously alluded to, is given in full by Dr. Green (polypi of the larynx), who says in reference to it: "Several attempts have been made by different surgeons to remove these excrescences by laryngotomy; but in no instance has the operation proved successful except in the above case observed and recorded by Professor Ehrmann." Dr. Green, in an extremely interesting case, succeeded, after repeated and persevering efforts, in grasping a polypus of the larynx during its instantaneous protrusion through the glottis, and excising it with the most happy result. He also reports the cure of another case by cauterization. Dr. Gurdon Buck operated by laryngotomy three times in the case of a lady aged fifty-one, with effect of prolonging her life for more than a year.

The introduction of the laryngoscope has influenced the treatment as well as the diagnosis of this disease. Johnson, of King's College, in a lecture on the use of this instrument (*Lancet*, 1864), says: "Perhaps the greatest triumph of treatment by the aid of the laryngoscope has been the removal of tumours, polypi, and warty growths from the interior of the larynx. This feat has been accomplished now in numerous cases and with the most happy results." A number of these cases may be found reported in the *Lancet* and *Medical Times and Gazette*, principally by Mackenzie and Gibb who have each invented an instrument for the purpose, the former a forceps and the latter a wire ecraseur. Dr. Henry B. Sands, of the New York Hospital, in a valuable paper in the *New York Medical Journal* for May, 1865, reports a case of cancer of the larynx successfully removed by laryngotomy, and gives a table of fifty cases

of tumours of the larynx treated by operation, with a full history of the operation up to date, a comparison of the two methods of performing it, &c. Eleven of these fifty operations were performed by external excision, and the rest through the mouth. But three proved fatal—two of the former and one of the latter; and the aggregate of success in the results was such as to show that the operation is not only justifiable and encouraging but in many cases imperative.

In reference to the *cause* of these growths, I know of nothing to oppose the statement of Dr. Green, that as yet their origin is unknown.

In the present case the existence of secondary syphilis in the mother at the time of the child's birth, has naturally suggested the question whether the tumour, that brought its life to such an early close, had its origin in a hereditary taint. For light upon this subject, we turn first to the statistics of the disease. Dr. Buck gives syphilis as the probable cause in only one of the forty-two cases recorded in his table; in two of them, however, one by Dr. Reuf and the other by Rayer, syphilis is assigned as the cause by the original reporters. They are both in Ehrmann's monograph. There is a plate of the former described as "vegetations of the laryngeal cavity" communicated by Reuf, and considered by him to be syphilitic, but no history. The latter is from Rayer's *Atlas of Skin Diseases*. Under the head of "Syphilides," one of the plates (Pl. XIX., Fig. xi.), represents a larynx obstructed with vegetations which are referred to by Ehrmann as "probably venereal." In looking over a large number of cases of morbid growths in the larynx, recorded as post-mortem observations or diagnosticated by means of the laryngoscope, I find but five others in which syphilis was suspected, though I have been not a little surprised to find so many cases recorded without a history of any kind. Two of the five cases referred to are by Czermak (monograph on the laryngoscope). One was of an old Rabbi "suspected to have communicated syphilis to several children in practising the operation of circumcision," though he denied the charge; and the other "observed in a huntsman aged forty-one years, suspected of syphilis." The third was reported by Gibbs (*Medical Times and Gazette*, 1863) a case of "foliated growths in the true and false vocal cords in a young man aged twenty-four, with a syphilitic history," and the other two are in Dr. Mason's table recorded as "syphilitic (?)." None of those cases are at all conclusive; they only show that tumours of the larynx, like any other disease, may occur in connection with syphilis.

The present specimen has the appearance of the growths so frequently referred to as "warty excrescences," and the microscopical examination, made by Dr. Wm. Pepper, shows that such is its character. "It consists of epidermoid scales arranged in curved lamina, compressed with small amount of fibrous tissue interlacing and some shining granular matter." The only recognized syphilitic term that could be applied to it is "condylomata," or "venereal warts." There is an unfortunate confusion in the use of the term "condylomata," which is often applied to "mucous patches" or "tubercles." For instance, a case reported by Mackenzie as "syphilitic condylomata of the larynx" is plainly one of mucous patches. While the latter are among the most frequent forms of constitutional syphilis, it is thought by good authority, as Bumstead and others, that true warts are never strictly venereal, and that their connection with syphilis is merely accidental. Rayer (*Diseases of Skin*, p. 82) speaks of excrescences as due to a "morbid thickening of the corion, vascular rete, and epidermic lamellæ, and to increase of size in the papillæ of the skin," and says, "These excrescences

are of two kinds, syphilitic and non-syphilitic. To distinguish them attention must be paid to the situation in which they are evolved, to the previous state of the surface in which they have appeared, to their progress and to the coincidence or otherwise of syphilitic symptoms generally, rather than to the physical character of the growths themselves. Hunter and several other writers have denied the existence of any excrescences truly syphilitic in their nature. * * * * Numerous cases leave no doubt of the fact that certain excrescences are owing to the syphilitic cachexia, and that they sprout without evident inflammation." Corvisart (*Essai sur les Maladies du Cœur*, t. 8, p. 227) speaks of excrescences "of a venereal appearance" on the mitral valves of persons formerly affected with venereal disease. Laennec also mentions several similar cases, but thinks there is no adequate ground for speaking of them as syphilitic in their origin (*Traité de l'Auscultation Médiate*, t. 2, p. 618).

Other writers on diseases of the heart mention such cases without asserting their syphilitic nature. The idea of a venereal origin seems to have been associated with these formations, chiefly from their frequent occurrence upon or near the genital organs, where, Ricord says, they are a very frequent source of error among those who are acustomed to consider any affection of those parts as necessarily venereal (*Iconographie*).

That constitutional syphilis may frequently be the remote or accidental cause of warty tumours of the larynx is extremely probable. Professor Gross (*Surgery*) says: "Warty excrescences, similar to those of the vulva and penis, are sometimes found in the larynx. * * * * These vegetations are usually associated with thickening of the lining membrane of the tube, and are nearly always dependent upon a syphilitic taint of the system." Rokitansky, under the head of "laryngeal tumours," speaks of "condylomatous excrescences occurring upon or near an ulcerated base," as "most probably of a syphilitic nature." In such cases the growths are found in company with decided marks of inflammation of the mucous membrane, without which I believe there is not the slightest evidence that they ever occur as a result of constitutional syphilis. I believe that such tumours, when found in venereal subjects, may be fairly considered to be either an accidental complication, an hypertrophy of the epithelium resulting from the irritation of repeated attacks of laryngitis, or a new growth formed by the deposition of lymph and its subsequent transformation into fibrous tissue. In the conflict of authorities in regard to the venereal character of warty growths and the meagreness of details bearing upon this point in recorded cases, it is impossible to say positively that this tumour is or is not syphilitic. But when we consider the youth of the subject, its good general health, its freedom from all appearance of syphilitic cachexia, and the entire absence of any sign of inflammation of the lining membrane of the trachea, I think it may be safely asserted that the probabilities of the case and the weight of authority are on the side of the negative.

Feb. 14th. Cerebro-Spinal Meningitis. Dr. HUTCHINSON gave the history of the case as follows:—

Mary McCabe, aged about 50 years, married, by occupation a nurse, was admitted into the Episcopal Hospital on the afternoon of Tuesday, Jan. 30, 1866.

She appears to have been in her usual health up to the Sunday preceding her admission, and was engaged at that time in nursing a severe case of fever, said to be typhoid; on that day she complained of a slight soreness

in the last phalanx of the index finger of the left hand, but she continued at her post until the next day, when she was too ill to fulfil her duties.

The following are the notes of Dr. Watson, the resident physician, made at the time of her admission. The patient walked up to the third story of the building, seemed perfectly conscious, but is indisposed to talk much; complains of pain through her body and of great difficulty of breathing; the face is pale; nostrils dilated; respiration superficial and frequent; pulse 140 and feeble; skin dry, but only moderately warm; the *calor mordax*, of typhus being entirely absent; the pupils very much contracted; tongue moist, but coated with a whitish fur; auscultation revealed the presence of sonorous and sibilant rales throughout the chest, and at one point well marked crepitation, at which point there was dulness on percussion. The decubitus was dorsal, the head being at the same time retracted. She was ordered f℥ss of solution of morphia, and a wineglassful of milk punch every three hours. At midnight she seemed asleep.

Jan. 31. No great change in her condition; pulse not quite so frequent, 112 to the minute; a few petechiæ to be seen upon examining chest and abdomen; turpentine and muriatic acid to be given internally; the amount of stimulus to be doubled, and counter-irritation to the chest to be made by means of turpentine stupes. The resident physician was directed to give her quinia in large doses, if improvement did not take place before evening. There was a small collection of blood and pus under the cuticle around the nail of the index finger of the left hand, which was evacuated and then treated with a poultice; there was also slight redness of the back of the hand, but the lymphatics of the arms were not involved. The turpentine failing to produce redness of the skin, later in the day mustard was applied and kept on for over an hour without producing the desired effect. Dry cups were then applied to the whole surface of back and sides of thorax, and under their influence respiration became more easy and less frequent, falling from 50 to 40. At 7 P. M., the effect of the dry cupping having passed off, the cups were again applied with the effect of producing as marked relief as before.

The inflammation of finger subsiding, and has evidently nothing to do with her disease.

Feb. 1. Patient is evidently much worse; face pale with a bluish hue; pupils exceedingly contracted; breathing very laboured; extremities cold; refuses to take stimulants and food, and seems unable to swallow; pressure on the back of the neck elicits a cry of pain; no fresh petechiæ on abdomen.

Heat to be applied to feet, turpentine to the chest, and an injection of milk punch and 12 grs. of sulphate of quinia to be administered. The injection came away two hours later, and brought away some yellow feces —it was repeated with the same effect.

Death took place at 4 P. M., a little less than two days after her admission, and about four after her seizure.

Autopsy 18 *hours after death.* Rigor mortis not well marked.

Upon opening the head an unusual injection of the veins of the meninges together with opacity of these membranes was observed, and on attempting to remove the brain four or five fluidounces of serum escaped. A small quantity of effusion was found in the ventricles, but the whole of the brain was in an œdematous condition, the serum exuding upon the slightest pressure. In the pleural cavities a slight effusion had taken place; on the right side there were old pleuritic adhesions; in the middle of the right

lung, corresponding to the point where dulness and crepitation had been noticed, a low form of hepatization of the lung existed, and other similar points were found throughout both lungs.

The heart was healthy, but presented a large amount of fat deposited in its walls; a very small fibrinous clot occupied the left ventricle, with which exception the blood was everywhere found fluid. The liver and kidney had both undergone slight fatty degeneration.

The intestines were carefully examined, but no ulceration of the patches was discovered. At the ileo-cæcal valve a large patch was found slightly elevated, having in it a slight development of pigment in points.

On the uterus were a number of pedunculated tumours which under the microscope presented a fibrous structure. The ovaries were undergoing the cystic degeneration.

A microscopic examination of the blood showed the red corpuscles to be crenated and to have no tendency to aggregate themselves in rolls.

Hepatic Abscess.—Dr. GEO. PEPPER exhibited the specimen and read the following account of the case from which it was derived.

George Robinson, æt. 50, colored—married—occupation privy cleaner, in which capacity he has worked for thirty years. Both parents healthy. Has had seven children, only one of whom is now alive, two having died of phthisis pulmonalis, and one, a daughter of twenty-eight, of carcinoma uteri; the others did not survive early infancy, being exceedingly delicate.

His own health has been good until the last year, although he has been much exposed to cold and wet, and addicted to the excessive use of stimuli. For the last year his health has been gradually failing; appetite very poor, and accompanied by various dyspeptic symptoms; vertigo, flatulence, constipation; bowels being rarely moved except by medicine; the passages being normal in appearance however; a frequent feeling of nausea, but never vomiting; violent headaches; no pain or uneasiness, save from the symptoms above enumerated in the abdomen; urine of normal quantity and quality; has never suffered from epistaxis; but about six months ago he suddenly gulped up a considerable quantity of florid blood, since which time he has had no return of it.

Dec. 13, 1865. For the last four weeks he has been obliged to cease from work on account of feeling particularly depressed and wretched; vertigo much increased; constant nausea, but no vomiting; bowels obstinately confined; headache increased in severity; griping pains in the abdomen, located around umbilicus; dull pain over region of liver, not constant, however; indistinct and irregular rigors; not followed by fever and sweating. His whole appearance is that of a man worn down by exhausting chronic disease; emaciation very great; skin harsh and dry; tongue heavily coated with a thick yellowish fur; breath heavy and offensive; conjunctiva slightly yellowish, but not more so than is frequently seen in negroes; no appearance of jaundice. Heart sounds feeble and lacking in character; respiratory sounds normal; pulse about 80, feeble. No pain on pressure over the abdomen; no tumour could be detected by palpation; the abdominal walls very rigid owing to firm contraction of the muscles. The percussion dulness of the liver much increased, extending from just below the nipple downwards about 9 inches, and transversely reaching considerably to the left of the sternum, touching in the median line the umbilicus. There was no ascites, or apparent disease of any other organ.

The urine was normal in quantity and of a reddish salmon colour, deposit-

ing upon standing nearly one-third of its bulk; sp. gr. 1022; very acid reaction; clears up by heat and NO_5, but only partially by either alone; no appearance of bile upon being tested by NO_5; on the addition of ½ bulk of SO_3 it became of a clear deep claret color; the sediment consisted of granular and globular urates and granular matter.

℞.—Sodæ bicarb. ʒj; Ext. taraxaci ʒij; Tinct. rhei fʒvj; Aq. cinnamomi fʒvj. S. fʒss ter die; mustard poultices over the abdomen; milk and lime-water for the nausea; the bowels to be opened by spr. rhei aromat. and ol. ricini.

15*th*. Apparent exacerbations taking place in the afternoon, accompanied by indistinct rigors. The sulphate of quinia was ordered in antiperiodic doses, and the tincture of the chloride of iron gtt. xx, thrice daily. The pain over the liver not being relieved by the mustard, a blister (4 × 4) was ordered; the remainder of the treatment continued.

He continued in very much the same condition until the 20th, gradually becoming weaker; the indistinct rigors continuing until that day, when, at four P. M., he had a very decided chill, followed by a profuse warm sweat. The intelligence still remained very good, but there was an increasing dislike to conversation, he would lie for hours in a dreamy condition, never speaking except to ask for what he desired. The emaciation proceeded very rapidly, and there was a total disgust for all kinds of nourishment. The bowels were opened every day or two, the passages being of normal appearance, though offensive. No pain.

25*th*. Weaker; rather more heavy and dull; dozes during the day, but restless at night. Complains of no pain or uneasiness. Tongue heavily coated; bowels confined; pulse 108, weak and compressible. Increase nourishment and stimuli; bowels to be opened by enema. The rigors have not been repeated since the 20th; the skin still very harsh and dry.

28*th*. Weaker; pulse 108, weak, compressible; mouth and lips dry and covered with hardened secretions; tongue dry and brown in the centre, protruded with a trembling motion. The abdominal walls more relaxed, allowing the liver to be felt; it seemed granular, but this feeling is very unsatisfactory, as the relaxation is but partial. There is no pain felt on pressure over the liver; the percussion dulness the same. The abdominal veins were enlarged, and the current reversed. Ordered gentian and lactate of iron.

29*th*. Rather stronger; taken nourishment more readily; tongue dry and brownish; pulse weak; very restless yesterday afternoon, but has been much quieter since; complains of no discomfort; urine more clear.

31*st*. Yesterday he became rapidly weaker; pulse being 112; extremities cool; power of deglutition impaired. To-day sinking rapidly; pulse 112, thready; respirations 36 per minute, shallow and rapid; voice husky; power of deglutition much impaired; urine still passed freely; the mouth and lips very dry; tongue dry and brown, extremities cool. Nutritious enema were ordered yesterday, but neglected.

Jan. 1, 1866. Died at 7 A. M. Remained in much the same condition as yesterday until the end.

Post-mortem twenty-seven hours after death.—Body much emaciated, the abdominal walls had very little fat on them. On opening the abdomen the liver was seen in situ much enlarged, extending down into the right lumbar region, and partially occupying the umbilical and left hypochondriac regions; it was of a dark brownish-red colour, smooth, present-

ing no appearance of granulation. On attempting to remove it the hand penetrated into a large abscess, seated on the right lobe, causing the discharge of fully Oij of a dark grumous fluid, varying in shade from a yellowish-gray to green and red; these latter being apparently caused by staining with bile and blood. The fluid contained much ropy gelatinous material, like the contents of certain ovarian cysts. The liver had formed no adhesions, the peritoneum being smooth over its whole surface, though considerably discoloured over the most superficial part of the abscess. The organ, when removed from the body, and the abscess entirely emptied of its contents, weighed 4 lbs. 14 oz.; it measured 9 inches in a vertical, and 11 inches in a transverse direction. The cavity occupied nearly the entire enlarged right lobe, excepting about 2½ inches of its anterior margin, as also the lobulus quadratus and spigelii. The cavity was not limited by any firm wall or membrane, but consisted of softened hepatic structure covered with a grayish-yellow shreddy material. The left lobe appeared healthy in structure with the exception of a patch of a purplish colour, nodular in appearance and of irregular shape, about ¾ of an inch in diameter, seated on the left posterior edge of the lobe; when incised it gave exit to a bloody fluid, and apparently consisted of a clot.

The gall-bladder was distended with healthy looking bile, the gall-ducts pervious, though rather enlarged and thickened; no biliary calculi; no obstruction of the portal vein, nor were there any evidences of thrombosis.

Stomach—Congested and contracted; no abrasion of the mucous membrane.

Intestines—The small intestine much contracted; the duodenum less so than either the jejunum or ileum; not congested; there was no ulceration or abrasion of the mucous membrane; no glandular enlargement; the intestine contained a considerable quantity of mucus tinged yellow. The large intestine contained a considerable amount of hardened feces, and was slightly contracted.

Pancreas—Healthy. *Spleen* small, soft, but apparently healthy. *Kidneys* healthy, but anæmic, the capsule of the left one much thickened; no effusion into the abdomen; bladder empty and contracted; mesenteric glands not enlarged.

Thorax—Lungs perfectly healthy, slightly congested posteriorly; adherent to the diaphragm by a few old adhesions. Bronchial glands not enlarged. *Heart* flabby; walls thinned; valves competent, foramen ovale closed. Aorta slightly dilated, slight calcareous deposit on the walls of the aorta above the valves. Pulmonary arteries healthy.

Heart filled with coagulated blood, many of the clots firmly interlaced among the columnæ carneæ, some of them being white and blanched.

Microscopic Examination.—The gelatinous grayish-yellow part of the discharge consisted of granular matter, granular cells (not numerous), blood corpuscles, oil globules, a few hepatic cells. On the addition of acetic acid the granular cells became less distinct, and the entire field assumed a delicate fibrillated appearance from the coagulation of the mucoid substance.

The stringy material attached to the walls of the abscess was of a grayish colour and more tenacious consistence; it consisted of granular cells, granular matter, oil globules, delicate fusiform cells, forming a species of areolæ, like dense corrective tissue, and containing in the meshes a few granular and cloudy hepatic cells.

The mass in the left lobe, of a purplish colour, showed blood corpuscles, but very slightly altered, and a few granular hepatic cells.

Left lobe, the hepatic structure apparently perfectly healthy.

Feb. 28. *Case of Obscure Nervous Disease.*—Dr. JOHN ASHHURST, Jr., read the following paper: This case, which presents several points of no little interest, is related more on account of the indirect lessons it conveys as to pathology, diagnosis, and treatment, than as affording any especial instructions for practice in similar contingencies. It should be premised that this history is compiled from very full notes, taken at the bedside of the patient, by Dr. Bodine, the senior house-surgeon of the hospital.

Thomas Kelley, a boy of 14 years, was admitted to the Episcopal Hospital on Wednesday evening, August 16th, 1865. The following imperfect account of his case was subsequently obtained from himself and his friends: On August 3d (nearly two weeks before entering the hospital), he fell from a wagon, receiving two wounds, one over the right temporal region, and another on the left side of the head. These wounds were healing when, on August 15th, in attempting to go down stairs, he fell down the entire flight of nine steps. He received from this fall a contusion over the right eye, and had some bleeding from the mouth. He stated that he was momentarily stunned by the fall, and that the first thing he noticed afterwards was a sharp pain extending from the back of the head down between the shoulders. When brought to the hospital on the following evening, he suffered from occasional violent and spasmodic tetanoid twitchings; his head was thrown back between his shoulders, his mouth firmly closed, and the muscles of his back and lower extremities rigid. He screamed violently, and was so restless that he could not be kept covered in bed. His mouth was drawn to the left side; he could not close the right eyelids, and the whole right side of the face appeared paralyzed. His pulse beat 120 strokes in the minute, and he had involuntary evacuations from both bladder and rectum.

August 17. I saw the patient for the first time at my morning visit on this day, and found his condition the same as above described. His treatment was established as follows: He is to have a wineglassful of milk every other hour, and a wineglassful of beef essence at the intervening hours; he is to take, besides, one-eighth of a grain of the extract of cannabis indica, three times a day. He is to be kept quiet in bed, with the room darkened, and is to have an ice-bag kept constantly to his head.

18*th.* His condition is not perceptibly changed; pulse 112. The cannabis indica to be given in quarter of a grain doses thrice daily, and his treatment in other respects to be the same.

19*th.* Pulse 116; I was struck to-day with the intense heat of skin, amounting to that described as "calor mordicans." ℞.—Ext. cannab. indicæ gr. $\frac{1}{4}$, four times daily. ℞.—Hydrarg. chlorid. mit. gr. $\frac{1}{6}$; Pulv. opii, gr. $\frac{1}{4}$, every fourth hour.

20*th.* He has had a convulsive seizure which lasted about three minutes. Heat of skin in axilla 105° Fahr.; pulse 120.

21*st.* The cannabis indica is to be stopped to-day; in other respects his treatment to be the same.

22*d.* He complains of intense pain in his legs; he has had a very restless night, and was very noisy. The same distortion of face and fixedness of the jaws continues as at first. Pulse 104. He swallows with difficulty,

and is therefore ordered a teacupful of milk, with a fluidounce of whiskey, every fourth hour, by injection.

23*d*. Pulse 92—100, and feeble; respiration thirty-five in the minute; heat of skin in axilla 103° Fahr.; the left pupil is larger than the right. He is perfectly rigid, so that he can be lifted, merely by putting the hand under his head; he is not able to move his legs. His urine is scanty and with acid reaction; sp. gr. 1030. He is able to swallow more easily, but is growing thinner.

24*th*. Pulse 96; temperature of axilla 102° Fahr.; his face is still drawn to the left side, but he is able to partially close the right eyelids. He sleeps a little through the day; he complains of feeling cold. He has ten drops of laudanum added to each injection of whiskey and milk; the calomel and opium pills are stopped, and he is ordered ten grains of bromide of potassium three times a day.

25*th*. Pulse 84; respirations 32; temperature 102° Fahr.; he does not always retain his injections.

26*th*. Respirations 40 in the minute; the same difference in the pupils as before observed. There was some puffiness of the scalp in the right temporal region, which being incised gave exit to pus and revealed the bone denuded of periosteum beneath. The patient is very much weaker.

27*th*. Pulse 100; respirations 36; temperature 101° Fahr.; he says he feels very poorly; he moaned most of the night, and at times screamed violently; his toes are constantly contracted.

28*th*. Pulse 120; respirations 32; temperature 101° Fahr.; he is unable to swallow, wherefore 15 grains of bromide of potassium in a saturated solution are ordered to be given three times a day by hypodermic injection.

29*th*. Pulse 120; respirations 32; temperature 101° Fahr.; the hypodermic injection of bromide of potassium was given yesterday afternoon in the back, and this morning over the left deltoid muscle. A bed sore was found upon the occiput. He swallows better to-day, and the bromide is therefore again given by the mouth.

30*th*. Pulse 120; respirations 36; temperature 101° Fahr.; a copious crop of sudamina has made its appearance.

31*st*. Pulse 128; respirations 36; temperature 101° Fahr.; there is slightly less contortion of his face, and he can open his mouth better; the difference in the pupils is no longer perceptible.

September 1. He has less difficulty in swallowing; he takes milk, beef-essence, soup, eggs, and tea; and is always calling for something to eat different from what he has before him. His head was shaved to-day, and the bloodvessels of the scalp appear very prominent.

2*d*. There is scarcely any perceptible change in the patient's condition, but there seems to be a gradual failure of the powers of life. His urine and feces are passed involuntarily. His pulse to-day beat 120 strokes in the minute.

3*d*. There is less paralysis of the right side of the face; the respiration is quieter and less frequent; pulse 112–116; skin moist. The bromide of potassium injection over the deltoid muscle has produced an abscess which is opened.

4*th*. The patient continues in about the same state; he is to day placed upon a water-bed, which appears to make him more comfortable.

5*th*. Another abscess, having formed from the hypodermic injection in the back, is opened. He takes more food; his bowels hitherto have been

opened, although involuntarily, only once a day or once in two days; now they are moved more frequently. Pulse 104.

6th. Pulse 100; breathes quietly; takes less food, and is becoming more emaciated.

7th. He continues in about the same condition; he is constantly crying for something to eat which is not before him. The abscesses caused by the hypodermic injections manifest no tendency to heal. The bone beneath the abscess of the right temple is dead, but does not exfoliate.

On September 8th, 9th, and 10th, his condition was not materially different; on the night of the 11th he was very noisy.

12th. He has had diarrhœa for several days; as his bowels are moved involuntarily, his bed-clothing has to be changed four or five times a day. He is constantly eating, and yet is becoming skeletonized.

The record of his pulse during the next few days is as follows: September 12th, 96; 13th, 92; 14th, 88; 15th, 80; 16th, 72. On the night of the 16th there was no pulse at the wrist; the respiration was slow and laboured; the skin growing cold.

17th, 5½ A. M. The patient is moribund; the heart beats slowly and feebly; respirations 10 in the minute. 6 A. M., only 7 respirations in the minute; the skin is cold. Died at 6½ A. M.

An *autopsy* was made twenty-nine hours after death with the following results. Rigor mortis well marked; cadaver exceedingly emaciated. The external table of the skull in the right temporal region was exposed and dead for a space one inch by half an inch in extent; the inner table was, however, found to be healthy. The membranes of the brain presented no particularly abnormal appearances, though there was considerable pearliness of the arachnoid. The substance of the brain was much softened and presented a punctuated redness. The ventricles seemed normal. There was some congestion at the base of the brain. The spinal meninges were somewhat congested; the cord throughout its whole extent was softened and in the cervical portion almost diffluent.

No other abnormal appearances were observed in any organ.

Two questions of considerable interest are suggested by the preceding case.

1. Could the train of morbid changes which resulted in death, have been owing to the injuries received either by the first or subsequent accident to which the patient was exposed; or did the cerebro-spinal lesion antedate, and perhaps cause the falls, for the effects of which he was brought to the hospital?

2. Were the tetanoid symptoms which were so prominent on the patient's admission the indications of his real condition, and were the pathological appearances found after death owing to the continuance and persistence of tetanus, or was his real disease from the beginning an inflammatory affection of the cerebro-spinal substance and membranes, and was tetanus a mere epiphenomenon?

My own reflections upon the case would lead me to suppose that this patient suffered from cerebro-spinal softening, the result of inflammation, and from tetanus simultaneously.

Dr. William Hunt reported to the College of Physicians, in 1862, a remarkable case in which tetanus coexisted with paralysis. (*Am. Journ. Med. Sciences*, Jan. 1863, p. 82.) In the case which I have this evening brought before the Society, not only did those two apparently opposing conditions coexist, but the rigidity of spinal meningitis was superadded.

I am further inclined to think that the morbid changes in this case had actually a traumatic origin. The most serious visceral lesions occasionally accompany apparently slight injuries of the scalp; while the only cases of tetanus in Mr. Curling's table, which followed wounds of the head, were in every instance the sequel of comparatively slight lacerations or contusions.

Cystic Abscess of both Kidneys accompanied by Renal Calculi.—Dr. TYSON presented the specimen and gave the history of the case as follows:—

I. McI., aged 48, born in England, resided in this city eighteen years previous to his death. His occupation had been, at one time, that of a teacher, and later a sexton.

Always delicate, with no hereditary taint traceable. During summer previous to death, had been much prostrated by an attack of diarrhœa, obstinate in its continuance. His habits were at all times good.

The history of the present disease, in consequence of his being so short a time under notice, could be imperfectly traced; but he had for many years suffered with pain in the region of the kidneys, extending along the course of the ureters. Paroxysms of greater intensity occurred at intervals which were agonizing, causing him uncontrollably to roll upon the floor. These, according to the statement of his wife, occurred very early in life, and continued at intervals up to the date of death. They were often attended by difficult micturition and scanty urine, which apparently contained blood.

He had experienced one of these attacks the day before I saw him, which was Thursday, February 22d, 1866, when he was still suffering from dysuria, of which he was relieved by suppositories of aqueous extract of opium. His aspect was that of a man with phthisis; emaciated, dispirited, and with clear complexion. He had, however, no cough, and respiration was normal. He complained of slight nausea, which alarmed him somewhat, being quite unusual with him. He was already under tonic and stimulating treatment, which was continued.

The next day found him more prostrated, and confined to his bed. His nausea had increased, and he regurgitated rather than vomited large quantities of fluid evidently containing biliary matter. Some of the urine and vomited matter were obtained for examination. The urine was fetid, and exhibited the peculiar smoky appearance of urine containing blood. It proved to be highly albuminous, at least three-fourths of its bulk being precipitated on application of heat and nitric acid. Microscopically, there appeared blood corpuscles, and granular nucleated corpuscles, exhibiting the phenomena of pus corpuscles, and which proved to be such by their action with liquor potassæ. Few phosphatic crystals, and no oxalates were noticed. The vomited matter was principally fluid taken into the stomach, and contained biliary matter.

February 25th Prof. F. G. Smith saw him in consultation. Physical exploration revealed the superior edge of the liver as high as the right nipple, while it extended also anteriorly, and apparently inferiorly. An enlarged condition of the veins of the region of the liver, attending this apparent enlargement, led to suspicion of some disease of this organ also. Though this state of the veins appeared also on the left side.

The patient sank gradually, and by Tuesday, February 27th, uræmic poisoning manifested itself in coma, and he died at 4 P. M. of this day.

Twenty hours after death, a post-mortem was made. Body in ice, from which it was not removed to make examination. The left kidney was first

removed, and was more than twice the normal size. An abscess was ruptured in removal, and large quantities of pus flowed into the abdominal cavity, so that it was probably not seen in its state of greatest enlargement.

The secreting structure of the kidney was much intruded upon, so that but little remained to carry on its peculiar function. In the pelvis of the kidney lay a calculus as large as the end of an adult thumb, or as large as a good-sized hickory-nut.

The right kidney was next sought for. Its size may be conceived, when we say it was at first sight mistaken for the distended stomach. The bulk was made up of purulent cysts, occupying the entire kidney, none of the glandular structure of which appeared remaining. Two or more of these cysts were ruptured in removing, so that its size when exhibited to the Society was much diminished. The ureter was dilated to the diameter of the little finger, and in the same relative position with the left kidney appeared a renal calculus of about the same size as that found in the former. It was this immense mass which displaced the liver upwards and laterally, and itself caused the dulness inferiorly. The liver, however, exhibited to the naked eye no diseased appearances. Under the microscope it was somewhat fatty. Qualitative analysis showed the peripheral portion of the calculi to be made up of urates, phosphates, and oxalates—the central almost exclusively of urates. Many smaller spherical calculi were found in the cavities formed by the abscesses.

Tumour of Brain.—Dr. HUTCHINSON read the following report of the case :—

Edith Boyd, aged 13 years, a native of North Carolina, was admitted to the Children's Hospital January 17, 1865. I first saw her in June of the same year, and the notes which I took at the time are as follows :—

She is a pale, badly nourished child, totally uneducated, but possessed of a fair share of intelligence. Three years ago, the exact date she cannot remember, she was struck on the head with a piece of wood in the hands of a rebel soldier. Attempting to protect her head, she received a severe blow across the base of the middle ring and little finger of the right hand which caused a contused wound, the scar of which is still very apparent. The wound seems to have presented no unusual characters, but was rather slow in healing.

No general symptoms followed immediately after the reception of the injury, the child continuing in her usual health for two years, after that she first noticed a tendency in the right arm to be drawn in towards the side, which was followed by inability to abduct the arm, and this in its turn by entire loss of all voluntary motion at the shoulder-joint; soon after the biceps and the flexors of the wrist began to contract rigidly.

The forearm is strongly flexed upon the arm, which is in a state of extreme adduction, so that the hand, which is also flexed, rests upon the upper portion of the sternum. The hand is flexed while the fingers are separated, and so extended as to form an arch with the dorsum of the hand. The trapezius is likewise contracted, and as a consequence the whole shoulder is higher than the other. All the contracted muscles are wasted, but respond, although feebly, to galvano-electricity.

Sensation is perfect in all parts, except on the back of the hand.

In addition to the above there is partial paralysis of the right lower extremity, the foot being inverted, but there is no wasting nor contraction

of the muscles. Occasionally the mouth is drawn to the right side, but this is slight and not permanent.

She has had a convulsion which took place in February subsequently to her admission to the hospital, and consequently long after the commencement of the contractions. She denies ever having had anything of the kind previously, and there is no one else who can furnish us any information.

She seems to have had no treatment in the South; since her admission it has consisted in the administration of tonics, iodide of potassium, strychnia, and in the application of a stimulating liniment to the limb and of the cold douche to the spine.

July 1. The same treatment was continued during June with the effect of producing slight amelioration of the symptoms, the patient being now able to execute some of the movements of the arm.

15*th*. A few days ago I etherized the patient, but did not succeed in producing relaxation of the muscles, on the contrary, they seemed to become more rigid. Her treatment now consists in the daily application of electricity to the arm and leg, in the use of a stimulating liniment as before. and in the internal administration of tonics and of bromide of potassium, Passive motion is likewise employed.

August 1. Much good appears to have been effected by the passive motion. When I first resorted to it, the wrist could only be extended with difficulty and never without exciting a good deal of pain, and this was true to even a greater extent of the attempt to flex the fingers: the rigidity is now in both cases overcome with comparative ease, while the forearm now makes with the arm an angle considerably greater than a right angle. I have not been so successful in my attempts to produce motion at the shoulder-joint. At one time a weight was attached to the forearm in the hope that it would overcome the tonic contraction of the biceps, although some good was accomplished by its use, it was abandoned in consequence of slight ulceration.

10*th*. The hand is now placed in Bond's splint, which is admirably adapted to overcome the flexion of the wrist and the extension of the fingers.

September 1. Great improvement has resulted from the use of the splint, and this improvement is best illustrated by the fact that the patient is now able to pick up a small coin from the floor. Her general health has been likewise improved by the treatment pursued. Since the date of the last note I placed the right leg in a long fracture-box with the view of overcoming inversion, but no advantage seemed to follow its use. She has unfortunately taken scabies from one of the other patients, and this is accompanied by an extensive eruption of eczema, which renders necessary a suspension of all active treatment.

October 15. The eczema has disappeared. Some of the advantage gained appeared to have been lost by the discontinuance of the remedies; the former treatment is now to be resumed.

February 3. In November the case passed into the hands of one of my colleagues. About the 21st of November the child had another convulsion, which, like the first, appeared to have been epileptiform. After this she appeared to have enjoyed comparative health until January 27, 1866, when she was seized with a succession of convulsions which lasted till February 2, when she died.

The attending physicians told me that these convulsions were so violent that the patient was thrown out of bed by them, and recurred as often as

four times in an hour. After their first occurrence no interval of consciousness occurred. The convulsions affected both sides, but the right to a greater extent.

The *autopsy* was made by Drs. F. W. Lewis, S. W. Mitchell, and myself, twenty-two hours after death. The head and spinal canal were only opened. The brain generally presented the normal degree of firmness, the centre of the left anterior lobe was occupied by a hardened mass. There was a good deal of venous injection of the meninges and some serous effusion in the ventricles. The spinal cord appeared to be healthy.

Dr. S. W. Mitchell was kind enough to examine microscopically the growth found in the brain, the spinal cord, the right median nerve, and the biceps muscle. The following is his report:—

Microscopic Examination.—The centre of the left anterior cerebral lobe was occupied by a hardened mass, around which was a circle of inflamed brain tissue in some places very soft. The central mass, about as large as a walnut, did not intrude distinctly upon the convolutions above it. The circle of red softening contained broken nerve tubes, some granulation globules, and a good deal of granular matter, part of which was soluble in ether, and was therefore fatty in character. The tumour was firm, but not so hard as scirrhous growths of malignant type. It had no definite edges, and was made up of finely granular matter with rare nuclei, but neither fibres nor fusiform cells. There were no traces of walls in it nor any stains or crystals of hæmatodin. It was, I think, a growth, and not the contents of any former apoplectic cavity. The convolutions were darker than common, and like all of the brain unusually firm.

I examined the medulla oblongata with care, after the method of Schroeder van der Kolk, making sections after hardening with alcohol, and soaking these sections in chloride of calcium. The tissue was uncommonly firm, but there was no fatty degeneration nor any marked interstitial albuminoid deposit. On first cutting across the medulla oblongata at the lower level of the corpora olivaria, I noted two red points in the corpora restiformia. On repeated section like points were seen in the gray matter only of all of the strands of the medulla oblongata. They proved to be minute extravasations of blood. I found no appearance of this nature in the portions of the medulla spinalis which were sent to me, and which came, I believe, from the cervical and upper dorsal region.

The biceps muscle presented the appearance, under the microscope, of advanced fatty degeneration.

REVIEWS.

ART. XX.—*A Treatise on the Principles and Practice of Medicine; designed for the Use of Practitioners and Students of Medicine.* By AUSTIN FLINT, M. D., Professor of the Principles and Practice of Medicine in the Bellevue Hospital Medical College, &c. 8vo. pp. 867. Philadelphia: Henry C. Lea, 1866.

TRUE poets are born poets. Art can do but little to perfect them; and the greatest have owed but little to art. But great physicians have always been the product of slow and persevering labour in the field of nature. All teachers, from Hippocrates to the last successful explorer of the mysteries of disease, have imbibed wisdom in the tainted and oppressive atmosphere that surrounds the sick bed. There only is a corrective to be found for the imperfections of previous conclusions as to matters of fact, and there is the only ultimate court of appeal against the dogmas of theory.

Scientific intuition, except in a figurative sense, is an absurdity. To the Creator alone belongs the power of originating either matter, force, or form, or of comprehending intuitively their laws. Man reaches the extreme limit of his genius, when a law of nature governing phenomena which are as unchangeable as the qualities of matter itself, is reached by an induction so rapid as to seem an intuition. It is only because those phenomena are in their nature simple and unvarying, that his feeble intelligence is able to discern the law which controls them. In this sphere one phenomenon stands for a thousand; to know one is to be acquainted with all. But in other departments of knowledge, phenomena are no longer identical; the apprehension of one is far from implying the understanding of any other; each must be studied by itself. Even then the phenomena of to-morrow may differ from those of to-day, and both from those of yesterday. Hence, instead of an unvarying model or formula being established, to which all future forms and phases of disease may be referred, instead even of a definition which shall represent, once and forever, the essential elements of a disease, its ideal image is perpetually undergoing modification. It is not an abstract creation of the mind, nor even the image of unvarying or constantly recurring and identical phenomena; it is only a faithful but imperfect picture which is continually becoming less imperfect as one detail after another is added to it of the natural object which it represents, and as one after another misrepresentation of reality which mars its truthfulness and unity is obliterated from the canvas.

Whoever would represent Medicine as it is, must possess some such idea as this of the task before him; and, while he carefully excludes all form and colour which nature does not authorize; while he renounces all attempts to fill up gaps in the chain of phenomena by links of his own forging, and to eke out what is incomplete by conjecture, he should omit nothing which is essential to the history and logical development of medicine as a science and an art, or nothing, at least, which is sanctioned by truth as well as hallowed by time. But a treatise on the whole theory and prac-

tice conceived in such a spirit, and faithfully executed, cannot be compressed within the limits of a single volume, nor even of two volumes like the one now before us, unless its author possess such a thorough mastery of the subject as will enable him to present its essential rather than its adventitious features, and preserve its unity without exaggerating its details. At the same time, if his work is intended for the learner and the ordinary practitioner, rather than for the scientific physician who seeks a solution, or, where that is impracticable, an enlightened discussion of the more intricate problems of pathology and therapeutics, he must take little for granted, and carefully winnow the mature and perfect seeds of knowledge from the crude and imperfect grain, and also from the chaff of false science and mere speculation.

We are happy to think that this object is very successfully attained in the work before us. The author speaks of it as a "Digest," of the "condensation" of its matter, and of the "conciseness consistent with clearness" which he has studied to preserve in its style. Avoiding amplification in language, and using illustrative cases very sparingly, he has, nevertheless, always made himself clearly understood, and he generally leaves upon the reader's mind, not only a distinct idea, but an impression that it has been clothed in the most appropriate words. Solid, compact, yet clear, it adequately represents the present condition of practical medicine as it could only be done by a physician who unites to scientific culture a large and well digested experience in the clinical study of medicine.

The fruits of his long and diligent observation are familiar to the readers of this journal by his numerous contributions to practical medicine, as they are to the profession generally by his works on the Physical Diagnosis of Diseases of the Lungs and Heart, and by his Clinical Reports on Continued Fevers, &c. Indeed, it would be difficult to name an American physician who, by the extent, variety, and accuracy of his clinical studies has a better right to speak with authority upon many of the subjects of his present work, or whose conclusions in regard to others respecting which his own observation may have been less extensive and minute, are more deserving of attention and respect. The most perfect treatise on a subject like the present must, from the necessity of the case, and for the most part, indeed, be a critical compilation. But, when it is the work of a critic who is practically familiar with the phenomena and laws of disease, the effects of remedies, and the principles of medical observation, it assumes a value second only to that of his personal experience.

Premising these remarks, we shall endeavour to give some notion of the work before us.

An introductory chapter is occupied with a summary account of the province of medicine as distinguished from surgery and obstetrics. Not only in this chapter, which deals very much with definitions, but generally throughout his work, the author displays conspicuously a quality of rare excellence in medical writers as well as in other literary men, the power, namely, of expressing his ideas in succinct terms of definite signification. This, which is comparatively easy in the description of phenomena, is exceedingly difficult when the subject is an abstract one, and when the mind is obliged, as it were, to create the object, as well as to find words appropriate for describing it. And here it may be remarked that the style of the whole work is remarkable for its conciseness and compactness, for the excellent order of its ideas, and for the fitting words in which they are clothed. Such qualities are incompatible with loose and vague ideas in an author's

mind, and in the present instance may be presumed to be the consequence of his thorough acquaintance with the subjects he discusses. Indeed, they are most conspicuous in those chapters with which his previous publications attest his peculiar familiarity. Inequalities may be expected in the excellence of different parts on other grounds than that just referred to, and among them the author's peculiar tastes, his fondness for particular topics, his possible aversion to others, and his indifference to others still; but the reader should be content if no portion of the work be negligently executed, although some may bear marks of a peculiarly careful and even loving elaboration. As usual, in works of this sort, "The Principles of Medicine, or General Pathology," are treated of in several introductory chapters, although in a very summary manner. Yet the leading facts of the science of morbid anatomy, including the processes by which the lesions arise, are clearly and correctly set forth. One statement is made, however, which, we think, cannot be accepted as expressing the present doctrine in regard to tubercle. The author maintains that the term "tuberculous" should be restricted to yellow tubercle, and that there is no foundation for the idea, which originated with Laennec, that yellow is developed from gray or miliary tubercle. We have elsewhere shown in this Journal (July, 1861, p. 140) that Rokitansky, having abandoned the contrary opinion, reasserted the original doctrine of Laennec, adding that "the metamorphosis may commence so early and advance so rapidly as to make it seem as if the tubercle had been originally formed opaque and yellow;" and this, we apprehend, is the teaching of every authoritative pathologist, except Robin. Another statement which is liable to mislead, is that "a truly scrofulous deposit is identical with the tuberculous;" for it is unaccompanied by any sufficient declaration of the essential differences between scrofula and tuberculosis as diseases. It is, indeed, said that "clinical observation appears to show that they who suffer from scrofulous or tuberculous affections of the glands of the neck in early life are not more liable than others to pulmonary tuberculosis in after life;" but that is not by any means the whole truth. It would be much more correct to say that glandular scrofula seems rather to exclude pulmonary tuberculosis, and that, as complications of phthisis, tubercles may be found in almost every other organ and membrane rather than in the lymphatic glands.

The essential unity of the different forms of cancer is very well stated; but it is not made sufficiently plain that the differences in their gross forms depend chiefly upon the rapidity of their growth, and that there is no such thing as a specific cancer-cell. The author doubts that "the system becomes infected by the introduction into the circulation of matter derived from an existing cancerous affection;" but we may be permitted to suggest that the facts of the case do not support his conclusion, since nothing is more notorious than that the extension of cancer from organ to organ follows the anatomical relations and dependencies of the organs successively affected. While, also, it must be admitted, as he states, that a cancerous diathesis may be inherited, it must also be acknowledged that a hereditary taint can be traced in only a very small fraction (about 8 per cent.) of the cases; and, further, it is very certain that the usually recognized signs of the diathesis in question are the effects of the developed disease, and not the indications either of its imminent outbreak, or of a remote tendency to its production.

The articles on Transudations, Dropsies, and Degenerations are very clear, and, for the most part, accurate; but the value of the iodine test for

amyloid degeneration is over-estimated. The changes of colour which attend its application are now known to depend upon mechanical causes, and not upon the presence of starch or any analogous substance. It is stated, under the head of Pneumatoses, that excessive distension of the stomach and bowels by gas must be accounted for by supposing it to be secreted by the mucous surface of these organs; but, apart from the impossibility involved in the supposition that such volumes of gas could be contained in the blood, it is now pretty well ascertained that the sudden distension of these cavities with gas proceeds from the equally sudden relaxation of their muscular walls; that it is, in other words, a nervous phenomenon. Every one must have noticed in certain cases of dyspepsia, how pressure on either side of the lower dorsal spinous processes will produce a sudden distension of the stomach, and sometimes abundant eructations of flatus.

The morbid conditions of the blood, plethora, anæmia, &c., are briefly but very clearly described. Plethora is defined "an increase in the number of the red globules," after Andral; but it is very certain that the mass of the blood is also increased in this affection, since vascular turgor is one of its most striking phenomena. There is no ground for coining a new word, *polyhæmia*, to designate a super-abundance of normal blood in the system. The condition in which the quantity of the circulating fluid is augmented, but its crasis impaired, is described by our author as pseudo-plethora. The appropriate and usual designation of this condition, serous plethora, he seems to have overlooked. Under *hyperinosis* there is an argument which, it seems to us, involves a grave error, since it is employed to sustain a practice which the experience of ages condemns. Blood-letting and low diet, we are told, increase the fibrin in the blood; now, an increase of fibrin in the blood is an effect of inflammation; *ergo*, blood-letting and diet promote inflammation! Such is the practical *reductio ad absurdum* of therapeutics in the school of Bruno redivivus. The fallacy lies in this: that the increase in the *proportion* of fibrin in equal quantities of blood, drawn on consecutive days during an inflammation, is made to represent the *absolute quantity* of fibrin in the blood. As an acute attack of disease advances, the blood disks decline both positively and relatively, because less food is assimilated than in health, and at the same time more blood disks become effete and perish; at the same time, also, the proportion of fibrin rises because disintegration continues, and elimination is checked. Necessarily, therefore, the disproportion between these two elements is ever on the increase when depletion is employed, since the source which supplies the one is cut off or obstructed, while access to that which supplies the other is not interfered with until the waste of the tissues has reached a very low point. Analyses of the blood, therefore, are insufficient to prove whether the absolute quantity of fibrin in that fluid is increased or diminished; and consequently the proposition that depletion and diet augment the fibrin or favour inflammation is an unwarranted assumption, as well as a direct contradiction of the medical experience of all ages. The associate proposition that food and stimulants are the appropriate, rational, and specific remedies for inflammation or for hyperinosis, however induced, is one which, in spite of the doctors, nature revolts at, and manifests her repugnance by a loss of appetite, and an aversion to food which amounts often to a loathing, while she equally signifies her desire to promote the waste of tissue by a craving for water which is often incessant and insatiable. We are perpetually witnesses of her ineffectual struggles under

the fashionable system of therapeutics, which kills with well-meant but most pernicious kindness, perhaps as many as were at one time sacrificed to the lancet, mercury, and perturbative drugs of all sorts. Unfortunately, the temptations of the physician to active interference with the course of disease seem to be irresistible. He has a lurking suspicion that his mission is unfulfilled, or at least will seem to be so, unless the patient is made to pay both in person and in purse; and hence he acquires a habit of treating nature as if she were a laggard in her duty, and required to be smartly pricked at times to prevent her slumbering at her post. Or, finding that the more fastidious of his sick revolt at the heroic and repulsive doses he prescribes, and exhibit a perverse tendency to run off into moonshine medicine, he keeps them faithful to him, or lures them back by a system as simple as that of a famous quack, whose motto was, "Life is heat, Disease is cold," and, by gorging them with dainties and alcohol, at last puts out fire by fire, if, haply, in the process the patient's life be not extinguished.

In the succeeding article upon coagulation of the blood, which presents an excellent summary of the facts and relations of this subject, our author is again drawn into an error, as we consider it, when to the question, "Does buffed and cupped blood, when it denotes an excess of fibrin, constitute an indication for blood-letting?" he answers, "Certainly not, for blood-letting tends to increase the fibrin, and diminish the globules;" but he adds, "The propriety of bleeding must therefore rest on other grounds." These grounds are indeed not indicated, perhaps because they would have been out of place in the actual discussion; but there is left upon the reader's mind an impression that the pathological objection just stated is an unanswerable one; whereas, if the reflections we have made above are just, the objection is totally without validity on correct pathological grounds, as well as on that of experience. Indeed, the topic appears to us to be precisely one of those which most forcibly illustrate the danger of founding practice upon theory. A little further on, we meet with an instance of the same sort. It is stated that Dr. Richardson has attempted to show, and the author regards his explanation as probably true, that the fluidity of the blood is preserved by the presence of ammonia in it. It is added, that this medicine is now administered with a view to maintain the liquidity of the fibrin in the blood in certain cases of hyperinosis. It would follow that ammonia must be strongly contraindicated in whatever diseases are characterized by an impaired coagulability of the blood. But, if so, what becomes of the testimony of the whole world in favour of ammonia in typhus fever, and in poisoning by venomous serpents and insects, affections in which the crasis of the blood is notoriously impaired? But here, as in the other case, the theory, like so many others, rests upon an insecure foundation; for the reader need not be told that the conclusions of Dr. Richardson are very far from from being accepted by physiologists, many of whom deduce very different consequences from the experiments themselves.

Several articles follow on the increase and diminution of albumen, water, fat, sugar, and excrementitious substances in the blood. It is said to be "not improbable" that the vapour of the expired breath contains excrementitious principles. No allusion is here made to the presence of ammonia in this exhalation during typhus fever, uræmia, &c. Cholæmia and pyæmia are considered in this connection, and the more precise elements of knowledge at present existing in regard to viruses, miasms, venoms, and

poisons are succinctly but clearly set forth. In a subsequent article, the doctrine of the primary origin in blood changes of all diseases arising within the body is maintained in a brief but satisfactory argument. Three chapters on etiology, symptomatology, and general therapeutics conclude the first part of the work.

We cannot take leave of this portion of the treatise without a more special reference to its principal subjects, general pathology and morbid anatomy, nor without reiterating the surprise which has often been expressed, that among the leading medical schools of America one only possesses a chair of pathological anatomy. In all of them, the professor of the theory and practice of medicine is supposed to afford instruction upon that branch of medical science; but it is abundantly evident that his time is wholly insufficient for a complete account even of the clinical relations of disease. At every step of his course he is obliged to assume the existence of a knowledge respecting morbid processes and products, on the part of his pupils, which he is sure that they do not possess, even in reference to individual diseases; and that far less can they be supposed acquainted with the nature, mode of development, tendencies, and effects of morbid processes, as they are presented in diseases which are nosologically and clinically different. General ideas of disease they have next to none; and the longer they sit under the instruction, whose great deficiency we deplore, the more they become fixed in the error that diseases are separate entities, like so many plants or animals, and the less they recognize in them their genuine characters as various disorders of the same living organic whole. How fruitful a source this is of scientific error, how powerfully it tends to render physicians routinists in practice, and credulous of every novelty, provided it be only asserted strongly and persistently, must be evident to every observant and reflecting man, whose public training or whose self-education has enabled him to survey the field of medicine from an elevated position. If medicine were taught as it should be; if in every medical college general pathology and morbid anatomy entered into the ordinary curriculum, we should less frequently observe than now a neglect of the purely scientific branches upon the ground of their not being "practical;" for it would then be apparent that chemistry and physiology are the only keys which can unlock the doors which conceal the secrets of life and disease, and that no idea of disease can be complete, or even accurate, which does not embrace that of its accompanying changes of structure, and of their mode of production.

The Introductory Chapter of Part II., embracing the great body of the work, and devoted to "Practice of Medicine or Special Pathology," contains some very accurate definitions, or short descriptions, of the principal terms to be employed such as "Clinical History," "Pathological Character," and "Disease" itself. No novelty in classification is attempted, but the usual division adopted into General and Local Diseases. General diseases are, however, contrary to the usual custom, treated of last, instead of at the beginning of the work, an innovation which, we think, is hardly justified by convenience or sound logic. Again, in the first Section, comprising diseases of the respiratory system, pleuritis and several other affections of the lungs precede diseases of the larynx, which, in turn, are followed by pulmonary tuberculosis. This arrangement, also, appears to be hardly justified by reason or convenience.

As might be expected from an author who has already written so ably upon diseases of the lungs and heart, the chapters which he devotes to

these subjects are remarkable for their clearness and completeness, although, as it is his right to do, he refers for many of the minuter details to his special works upon these subjects. Speaking of the effusion in pleurisy, it is mentioned that where general adhesion in one pleura has been permanently established, causes which occasion hydrothorax on the opposite side may produce œdema of the lung on the side where the adhesions exist. Of this peculiarity we have recently met with an example in a lady who laboured under general dropsy produced by obstructive mitral disease. The author does not furnish a separate account of subacute pleurisy, although he speaks of it as a variety of frequent occurrence, a statement in which we fully concur. We have repeatedly been consulted by persons having a pleural cavity entirely filled with fluid without any symptom whatever pointing to the chest as the seat of disease; and, even while writing this page, we were called on by a medical gentleman who discovered, only by accident, that he had a pleurisy of the left side; and yet so copious was the effused liquid that it had dislocated the heart, whose apex we found beating half-way between the sternum and the right nipple.

In the treatment of acute pleurisy the author concludes that depletion is rarely necessary, but that, nevertheless, it tends materially and immediately to the patient's relief when he is plethoric, oppressed, and suffering severe pain. We are convinced that it is infinitely safer and less exhausting, as well as more useful, than tartar emetic, digitalis, aconite, or veratrum viride, which we are told diminish the frequency and the force of the heart's action. The author is too sound a pathologist to suppose that any or all of these medicines which merely depress the heart, can as favourably influence the inflammatory process, as can bleeding, or purgation, which depletes the vessels of their liquid contents; nor will he regard as indifferent the horrible nausea, the sense of sinking, or the downright syncope and death-like exhaustion which these agents are liable to produce if they exert any influence whatever. In some general remarks upon bloodletting he dissents from the opinion held by some that diseases have undergone a notable change during the last quarter of a century, and that bloodletting and other antiphlogistic measures are less appropriate now than formerly, on this account, and he expresses a conviction that antiphlogistic measures were no more appropriate then than now. Upon this question it is well known that men of the most enlightened and enlarged experience hold opposite opinions. In England authorities are divided, and we imagine that an equal divergence may be found among ourselves. A not inattentive observation of disease during the last thirty years has convinced us that the medical constitution changes during comparatively long periods, as it notoriously does within shorter spaces of time. We cannot for a moment admit, with our author, that to accept the occurrence of such changes as real would strike at the root of medical experience, and that they would render impossible permanent principles of practice in medicine. The phenomena of disease and diseases themselves are strikingly different in different climates and localities. The pupil of Parisian teachers who practises in Algeria, the British physician whose field of duty is in the east, our own northern graduates who dwell on the alluvial bottoms of the south, or on the distant shores of the Pacific Ocean, have all to learn new lessons, and modify those which their teachers inculcated in regard to the genius and the treatment of disease; and yet it would be preposterous to assume that on this account there are no permanent principles of medicine. In regard to this very subject of venesection, it is very

certain that southern nations, who live chiefly on vegetable food, are as intolerant of it and of other depletory measures, as the meat-eating tribes of the north support such evacuations well. If these things be so, is it incredible that in the same climatic region the genius of disease may from time to time undergo modifications, more permanently and on a larger scale, but of the same nature as those which constitute the familiar epidemic constitution? While maintaining an opinion opposed to our author's, we do not overlook the influence of fashion in medicine, nor hesitate to admit that few remedial measures have been more abused than depletion, because few, if any, can be mentioned more susceptible of abuse; but we have little hesitation in predicting that a remedy which has been in almost constant use since medicine became an art, will one day be as much in vogue as ever, and that a new cohort of Sangrados or Broussais will again abuse it to the prolongation of disease, the permanent injury of the health, and the peril of life itself.

In a subsequent paragraph our author lauds the use of opium as an antiphlogistic in acute pleurisy, as he does elsewhere, this virtue of the drug in other acute inflammations. Nearly all that he says of its power to eliminate pain and restlessness from the symptoms, and consequently to limit the inflammatory process to a greater or less extent, is in conformity with the well-established results of experience, as well as the advantage of prefacing its employment by that of bloodletting and other evacuants. After prescribing the manner in which tartar emetic and veratrum viride should be used, he adds that their importance is somewhat questionable. We take it to be even more than questionable, and even, as he says of the use of mercury and iodine employed as sorbefacients, objectionable. The latter of these medicines, as an external application, he properly considers of doubtful efficacy.

In the chapter on chronic pleurisy the author reiterates his previously published opinion, that the disease does not predispose to pulmonary tuberculosis, an opinion sustained by the observations of Dr. Blakiston, and which our own experience leads us to confirm. A curious case is related of a man in whom, after death, the left pleura was entirely lined by a chondroid formation from one-eighth to one-quarter of an inch in thickness, and so rigid after removal as to retain the shape of the cavity. It contained about two gallons of turbid liquid. The operation of thoracentesis is spoken of as innocuous. A case, which we think must be very rare, is mentioned, in which spontaneous perforation of the thoracic walls took place, although the effusion was not purulent. Under pneumo-hydrothorax it is stated that this condition always implies the existence of a communication with the external air through bronchia or else through the parietes of the chest. We have met with a case in which no such history could be discovered, but only that of an acute pleurisy with bronchitis occurring in a perfectly healthy man. It is, however, quite possible that a minute vomica, or a very limited emphysema, may have existed which occasioned a perforation of the pleura. A very interesting case is related by the author of simple pneumothorax produced, apparently, by carrying a heavy weight upon the back.

The subject of pneumonitis is treated in a very superior manner, as might be expected from the author's large experience and minute study of this disease. It is interesting to observe that he found the right lung was attacked more frequently than the left in the ratio of 1.7 : 1; while Grisolle, in his classical work on this subject gives the ratio of 1.8 : 1.

In the remarks upon the rate of removal of the exudation it might we think, have been stated, that this process is materially retarded by the presence of articular rheumatism, perhaps because the blood then becomes overloaded with fibrin. Such cases are not uncommon, and are, we have remarked, singularly tedious. The complication with periodical fever is alluded to, but the cases are not particularly mentioned in which the special phenomena of pneumonia are exhibited only during the paroxysms of the periodical affection. The pathological character of the disease is correctly stated to be an inflammation of the tissue lining the air cells, and not, as it is sometimes described, of the inter-vesicular connective tissue, a tissue which there is good reason to believe does not exist except upon the limits of the lobules. The influence of season in the production of this disease is not, perhaps, as accurately estimated as it might be; for, although it is very true, as our author remarks, that pneumonia everywhere prevails during the winter more than during the summer months, this effect he maintains, is clearly not attributable merely to cold, since he himself observed more than twice as many cases in March and April, as he did in January and February. So Grisolle (2d ed., 1864) states that out of 553 cases of pneumonia 104 occurred in April, and it appears that he met with nearly twice as many in March and April as he did in January and February (186 and 100). These results help to explain and justify our author's statement that "in this country the disease occurs in the Middle and Southern much oftener than in the Northern States." In the former, he remarks, it is emphatically the prevalent disease during the winter months, affecting especially the negro population. In a word, pneumonia is peculiarly apt to be produced, not by cold merely, but by cold and dampness acting upon persons debilitated and rendered morbidly susceptible to their influence by insufficient protection against inclement weather, as in the South, or by the abrupt vicissitudes of temperature which mark the close of winter and the beginning of spring in the North, and the incautious changes of clothing which are then indulged in. That it should be a more fatal disease in the Southern than in the Northern States, as the author alleges, is also explained by the more enervating influence of the climate in the former.

The author takes especial notice of the liability there is, in this disease, to death from the coagulation of fibrin in the right cavities of the heart, an event which he regards as of not infrequent occurrence, but which he thinks has not been sufficiently considered. They have, however, been fully described by Bouillaud and by Grisolle, although it is true that the latter appears to believe that the disorder of the circulation they give rise to is usually neither permanent nor fatal. Many years ago we reported a case (*Med. Examiner*, Jan. 1840) in which, along with double pneumonia and pericarditis, there was a large, firm, and pale coagulum in the right cavities of the heart, covered by a perfect membrane which had the aspect of a serous membrane.

Of the treatment advised in pneumonia we need only say that it is, on the whole, stimulant and supporting. Depletion is not excluded, but, on the contrary, admitted "in certain cases, as a palliative, and, perhaps, to some extent, as a curative, measure;" and sometimes, we are told, when this most powerful antiphlogistic remedy would be unsafe, it may be prudent to employ tartar emetic, veratrum viride, and saline purgatives; but opium is the main dependence in the second as well as the first stage; and in the second the leading general indication is to support the powers of life,

with more or less activity according to the greater or less predominance of the asthenic type.

In a short article on chronic pneumonitis the opinion of Rokitansky is quoted that "the exudation takes place into the inter-lobular and inter-vesicular areolar tissue," an opinion irreconcilable with the anatomical fact that no such tissue as that last mentioned exists. Besides, if the deposit leads, as it is said to lead, to a diminution of the volume of the affected portion, the condition of the tissue would seem to be more analogous to collapse of the lobules.

Our author throws doubt upon the common supposition that primary bronchitis is generally, or even frequently, produced by the action of cold, and thinks it reasonable to conclude that the disease is due to some morbific agent in the atmosphere, or some special atmospheric change. No plausible reason is alleged to support this scepticism upon a point of universal faith. Among the rarer dangers of this disease is one that might have been alluded to, its occurrence during paralysis of the external muscles of respiration. We have recently attended a little girl who had been for several months affected with general paralysis produced by an injury of the cervical portion of the spinal cord, or rather of its membranes. She was steadily recovering when she caught cold by lying too near a window during extremely cold weather; general bronchitis supervened, and her only available respiratory muscle, the diaphragm, being insufficient for expelling the bronchial secretions, she perished by slow asphyxia. The action of the chest in this case resembled that which occurs in emphysema of the lungs, the lower, anterior, and lateral portions being drawn inwards during respiration by the contraction of the diaphragm. The movement alluded to is described by the author of this work in his excellent article on pulmonary emphysema, but its mechanism is not explained.

In the introductory remarks to diseases of the larynx the author mentions a case of loss of the epiglottis, in which, after the ulcerated parts had healed, liquids and solids were swallowed without much inconvenience, and the quality of the voice underwent but little change. Cases of the same sort are narrated by Gibb and others, and they help to prove the extreme importance of laryngoscopy; for, before its introduction, the integrity of the epiglottis was thought to be essential to both deglutition and phonation.

The articles which treat of Laryngitis are marred by some peculiarities of nomenclature and arrangement which, it seems to us, obscure the subject greatly. The first affection is termed "Acute *Ordinary* Laryngitis," and yet the reader is told that in the adult it is so rare that practitioners of considerable experience may have never met with an example of it. Moreover, it is afterwards stated, and with apparent inconsistency, that *subacute* inflammation of the larynx is of frequent occurrence. The term "ordinary" in this connection is therefore a misnomer, or else the statement concerning the rarity of the disease is an error. Again, "subacute laryngitis" is made to stand for "catarrhal croup," an affection whose physiognomy is totally different, and is rendered so by the presence of a spasmodic element. This last form of laryngeal inflammation, one of the most common, and to parents a very alarming, affection of children, and which is familiar to most medical men as spasmodic laryngitis or spasmodic croup, is denied by our author the honour of even a separate and independent status, and is dismissed in half a page as a variety of spasm of the glottis. This is a most singular oversight; for spasm of the glottis is purely and

simply a reflex spasm excited by disease elsewhere than in the larnyx; whereas spasmodic laryngitis, as its name implies, is an affection of the larynx itself in which an inflammatory and a spasmodic element are combined. It is not, as the author states it to be, "purely spasmodic," but is very generally both preceded and followed by catarrhal symptoms. Finally, the name "œdema of the glottis" is restricted to a serous or dropsical effusion in the areolar tissue beneath the mucous membrane above the vocal cords, when it would be more correct to describe this œdema as an effect not only of general blood disorders, but also of inflammatory and ulcerative diseases of the larynx, and to recognize, with Dr. Gibb, a supra-glottic and a sub-glottic form.

Apart from these defects, as we deem them, the description of the symptoms of the several laryngeal affections is clear, and the rules given for their management judicious. But we are obliged to notice one or two exceptions. The cough in pseudo-membranous laryngitis is described as "shrill, barking, crowing, as if the sound were produced within a metallic tube, the *tussis clangosa* of Cullen, and accompanied frequently by sonorous or stridulous breathing." These terms are perfectly applicable to the cough of spasmodic laryngitis; but the cough of croup with false membrane is hoarse at first, then rapidly becomes smothered, and finally loses its sonorous quality altogether. Indeed, there is hardly a symptom of this fatal disease more characteristic than the *smothered* cough. The treatment recommended for croup is, for the most part, judicious; but the following language is very open to criticism:—

"The introduction of the sponge probang into the larynx of the child is difficult, owing to the small size of the glottis, and, frequently, the want of co-operation on the part of the patient; yet, it may be effected. I have witnessed a recovery in a case in which this was the chief measure relied upon. The applications were made twice daily. When the false membrane is loosened, the introduction of the sponge may be useful mechanically, detaching the membrane and pushing it below the glottis."

We suspect that these statements were written without mature consideration. It must have been forgotten by the author how overwhelming and conclusive is the experimental evidence against the possibility of the operation in question, even in cases of adults, published by the physicians of his own city, and must have overlooked the statement made by himself a few pages before, viz., "The exudation may not extend below the larynx, but *as a rule it takes place in the trachea*," so that the operation, even if it were feasible, would certainly tend to compact the exudation, and render the trachea altogether impervious, rather than to free it from the existing obstruction. Even Dr. Gibb, specialist though he be, and reputed very expert in laryngeal operations, gives no countenance to such an operation, but advises only the employment of "the spray of a solution of nitrate of silver."

A case is related by the author which, it seems to us, should have weight in the question whether, in many cases of chronic laryngeal obstruction, it might not be well to establish a permanent opening in the trachea.

"A patient aged about forty, admitted into the wards in Bellevue Hospital, suffering from the effects of a debauch, had a fistulous orifice in the anterior portion of the trachea large enough to admit the end of the forefinger. This fistula followed a wound received in a fracas, and had existed for seventeen years. It occasioned little or no inconvenience in respiration."

As might be expected, the chapters treating of pulmonary tuberculosis

are worthy of the author's reputation in this department of medicine. Of late years, certain medical writers, having apparently in view a vain and ephemeral popular applause, with its contingent gains, rather than the slower but more lasting approbation of professional judges, have ascribed certain symptoms and signs to what they are pleased to call "the pre-tuberculous stage" of pulmonary consumption. Of this the author mildly remarks that it "cannot be considered as established by clinical observation." The moderation of this judgment is, indeed, characteristic of his criticisms generally, and, perhaps, is most becoming in a purely didactic treatise; but one cannot help suspecting that so competent a judge must have had his equanimity frequently disturbed by current dicta and opinions which his own observation had proved to be not only erroneous, but groundless. Several writers, and some of excellent and deserved reputation, have also described dyspepsia as apt to precede the development of phthisis. But our author, who has certainly both possessed and taken advantage of opportunities as great as theirs, merely remarks: "If this be so, the ailments are not, as a rule, of a striking character." This, it appears to us, is stating his dissent in a less emphatic form than the case requires; for, certainly, among dyspeptics phthisis is a most unusual sequence of the digestive derangement, and among consumptives it is not very unusual for appetite and digestion to continue unimpaired until the end. Only a few weeks ago we lost a patient, a lady who passed through all the normal stages of chronic consumption, first in the left and afterwards in the right lung, and who, to the day of her death, ate, and with a good deal of relish, and always without any gastric disturbance, a great variety of solid and liquid nutritious food. Such cases, although numerous, do not certainly form the rule, which is that appetite and digestion sooner or later become impaired, as in the course of all chronic and wasting diseases.

In his remarks on the extremely unequal duration of chronic phthisis, the author states that he has a patient under observation in whom there is reason to believe it has existed for forty years. Such cases are sometimes seized upon by carping critics as throwing doubt upon the diagnostic skill of the physician, and it is well to have such an authority as the present one to appeal to in confirmation of an opinion well founded in fact. In another place he condemns the opinion, industriously propagated by certain persons, that chronic pharyngitis has a tendency to eventuate in pulmonary tuberculosis. He furnishes some striking illustrations of the mortality caused by the disease in certain families, even where the parents and their ancestors were free from the tuberculous taint. He also affirms, as the result of a special examination of the question, that scrofulous disease of the lymphatic glands in early life does not predispose to tubercular consumption. He is of opinion that the mortality from this disease "has undoubtedly diminished within the last ten or fifteen years," and thinks that "this must be obvious to medical observers whose professional experience extends backwards a quarter of a century or more," as well as deducible from the mortuary reports of Great Britain and of our own large cities. We think there is reason to apprehend that this statement is more favourable than is warranted by the facts of the case. The impressions of physicians upon such questions are evidently of little value; statistical results alone are worthy of any trust; and even these are open to a great many doubts. To mention one only, erroneous diagnosis; it is certain that deaths by various wasting pulmonary diseases, which were formerly reported as deaths from tubercular phthisis, are now found under the head of *bronchitis*

and elsewhere. Moreover, it must be remembered that the population is all the time rapidly increasing in most cities, and by the addition of a class more hardy than the original inhabitants, and of a greater average age than theirs. Again, if we take, in Paris, for instance, the annual mortality for a decennial period, as Boudin has done for that between 1839 and 1850, we find that the rate of mortality from consumption is positively increased, and not diminished. Sanitary improvement is, much more probably than the treatment of disease, the cause of whatever diminution of the death-rate is ascertained to have occurred in any place from which authentic and trustworthy returns have been made.

The author concurs with Walshe, Ware, and others, in believing that the prognosis is more favourable in cases characterized by the repeated occurrence of hæmoptysis than in others; he is of the opinion that laryngitis also is favourable, excepting the cases of it in which the epiglottis and top of the larynx are involved: and entertaining a similar opinion of perineal fistula, he advises that it should be allowed to continue without surgical interference. This advice is contrary to that of some surgeons, whose competency in the question may, however, without offence and fairly, be questioned.

The treatment of pulmonary consumption advised by the author contrasts strongly and strangely with that multifarious medication which is recommended in many works even now, and a few years ago was with vain prolixity set forth in all which discussed this subject. The question, Is the tuberculous cachexia removable by any known special remedy or remedies? he answers distinctly in the negative. The only measures indicated are those which tend to strengthen and invigorate; and the hygienic are infinitely more important than the medicinal. Exercise and nutritious food are the fundamental and essential elements of the treatment; the one to create appetite, the other to promote assimilation. "Let good digestion wait on appetite, and health on both." The author illustrates the influence of these agents, with particular reference to exercise in the open air, and to the use of alcohol and cod-liver oil, and cites many cases of apparent, if not of absolute, cure by their means. He notices a remarkable fact, which we have also observed, that in some cases of phthisis there is a singular tolerance of alcohol so long as the health remains impaired, but that when once the strength and flesh have been restored it begins to act as an intoxicating drink, and cannot be continued in the usual doses. This curious circumstance has a striking analogy in typhus fever, in the typhoid state, and in many asthenic conditions. He also calls attention to another well-established fact, that neither alcohol nor cod-liver oil affects all cases of consumption favourably. Some are utterly intolerant of both of these medicines. He passes in review and condemns several of the more recently proposed specifics; and remarks that he "can say nothing of the attempt to inject tuberculous cavities with a solution of nitrate of silver, &c." To say even this is perhaps over-much. Certain persons and their acts acquire a tinge of respectability from the merest notice of honest men.

Among the inflammations which it was formerly considered unsafe to treat without mercurialization is pericarditis; and, unless we are greatly mistaken, not a few practitioners consider it essential still. We are glad, therefore, to find a very decided opinion upon this subject expressed in the present work, the more so as it has been reached in spite of contrary impressions, not only entertained, but published, by the author. Since the publication of the opinion referred to, he says, "I have treated the cases

of pericarditis which have come under my observation without mercury, and I have found no reason to be dissatisfied with its omission." In this, as in other acute inflammations, he considers opium to be invaluable, and dwells on the importance of promoting the nutritive functions and supplying nutritious food when the active stage of the disease has passed.

The author adopts Dr. Richardson's theory of the genesis of endocarditis, ascribing it to an excess of lactic acid generated by the passage of the blood through the lungs in acute rheumatism. The theory appears to fulfil all the essential conditions of a correct one. Speaking of the murmurs in endocarditis, particular allusion is made to the fact that the most usual murmur is loudest near the heart's apex, while there is no reason to suppose it to be regurgitant, through mitral insufficiency. "It is an intra-ventricular murmur," the author remarks, "or it may be called a *mitral systolic murmur*, this term not implying the occurrence of regurgitation." This account is, perhaps, open to misinterpretation, for it is not evident how a murmur can be at once intra-ventricular and mitral, and yet not regurgitant; the term mitral being usually made to designate the left auriculo-ventricular orifice and the portions of the valve in immediate connection with it. It is possible, certainly, that a murmur may be generated *in the ventricle*, independently of mitral obstruction, but we do not possess any evidence of the fact. It is certain, also, that the mechanical relations of the mitral valve found after death in acute endocarditis do not lend themselves to the support of the supposition that the murmur in question is regurgitant. In fact, the only rational way of explaining most of the instances of mitral murmur in acute endocarditis is to regard them as generated by the direct current of the blood forced or drawn through the mitral orifice. It is, indeed, alleged by high authority that direct mitral murmurs are never recent; but perhaps it would be quite as correct to say that recent mitral murmurs are never regurgitant, since we are not acquainted with any demonstration of valvular insufficiency in acute endocarditis.

Among the causes of functional disorder of the heart, the author might have mentioned exhaustion from prolonged lactation, which is not always the same thing as anæmia; and exhaustion from extreme muscular fatigue, as in those numerous cases which were met with among soldiers during the late war. Speaking of the association of organic lesions and functional disorder, the very important remark is made that the aggregate of the symptoms present are often erroneously referred to the more permanent cause, and, consequently, that a graver prognosis is apt to be formed and pronounced than the circumstances really warrant. The prognosis in angina pectoris is very properly stated to be grave. Still, there are cases which should render a physician cautious in prognosticating a fatal issue. Some years ago we were consulted by a clergyman, who, without having had any known cause of heart disease, became subject to attacks of severe and well-marked angina pectoris. He presented a distinct and slightly rough basic systolic murmur. Treatment of mild dyspeptic symptoms and caution in regard to exercise were enjoined. At the end of a twelvemonth the paroxysms had become less frequent and severe, and the murmur was fainter; and after another year both had entirely ceased. Our author does not mention ethereal inhalations among the palliatives of the painful paroxysm. Judiciously employed, they are more efficient than other anodynes.

The third section, treating of diseases affecting the digestive system, opens with dysentery, an unusual arrangement, and one not justified by any

sufficient reason. The disease in question is pretty fully treated of, but its forms are not accurately distinguished. Its contagiousness is denied, without good grounds, as we believe. There seems to us superabundant proof of its being contagious in the same way as cholera, through the alvine evacuations of the sick. The treatment inculcated by the author excludes the once classic calomel and opium, and includes purgatives and opium, the latter in very large doses. A case is referred to of a male patient, not habituated to the use of opium before his illness, who gradually reached the dose of one grain of sulphate of morphia every hour for several consecutive days, without any narcotism. In another case two grains, hourly, of opium were given for the space of a week. Of course such doses are not recommended; but the facts just stated illustrate the remarkable tolerance of opium which is sometimes noticed in this disease. We hope to be pardoned if we doubt that they are ever necessary.

Acute enteritis is described as a separate disease—that is to say, as independent of substantial lesions of the bowels, such as morbid deposits—and also as a different affection from diarrhœa. If the latter, arising from atmospheric changes, be excluded, and also the enteritis of young children, which, after all, is rather an entero-colitis, or even an inflammation involving the entire digestive tract, it is not easy to see what cases remain to represent enteritis, except those produced by corrosive poisons. It may very truly be said, as it is by the author, to be "a rare form of disease after infantile life." Remarks of a similar kind are measurably, but in a far less degree, applicable to gastritis. In speaking of this disease, the author omits noticing two occasions of its occurrence which are more frequent than all of the rest united. We refer to remittent and yellow fever. In the latter, gastritis occurs in its most exquisite form; and in the former it is associated with duodenitis. An excellent description is given of the different species of pharyngitis; but there is one of frequent occurrence, and which is different from the erythematic in this, that, while it presents less redness and swelling of the pharyngeal mucous membrane, it occasions infinitely more pain in deglutition; indeed, that symptom constitutes its most striking peculiarity. We denominate it rheumatic pharyngitis. Reference is made to an interesting variety, "epidemic simple acute pharyngitis," of which the author recorded numerous examples in 1864. It appears to have been a very mild form of diphtheria, for cases such as he describes are frequent when diphtheria prevails. Of the chronic form of pharyngitis, called follicular, which has been so dishonestly abused, to the disgrace of certain members of the medical profession, and to the alarm and serious injury of confiding patients, the author says:—

"The inflammation has no tendency to pass into the laryngeal cavity." "Patients with this affection seldom become tuberculous; its existence is, to some extent, evidence of the non-existence of tuberculosis. It is a popular notion that this affection denotes a consumptive tendency, and this notion is encouraged by a host of irregular practitioners, who, within late years, in this country, have made diseases of the throat a specialty."

As was long ago taught by Professor Chapman, the author declares that the treatment, to be effective, must have reference to the system. "After considerable experience," he adds, "I have come to regard topical applications as generally of little or no value."

A very precise, and, for the nature of the work, a sufficiently detailed account, is furnished of induration, softening, simple ulcer, and carcinoma of the stomach. Here and there a statement may be found of doubtful

accuracy. Thus, in the history of simple gastric ulcer, it is said, following Dr. Brinton, that "there is no foundation for the idea that hemorrhage from the ulcer occurs vicariously in the place of menstruation." This statement is altogether too exclusive. Indeed, the author himself, when elsewhere speaking of gastrorrhagia, expressly admits that "it may occur in place of the menses in cases of amenorrhœa;" and again, "that it may take the place of the menses must be admitted." Now, if it may do so when the stomach is sound, how much more likely will it be to occur when the blood-vessels of that organ are already weakened by ulceration of its internal tunics. Speaking of the necessity of giving the stomach as much rest as possible in this disease, so as to favour cicatrization of the ulcers, some striking cases are mentioned, in which life was sustained for several weeks by the administration of nutritive enemas. It must not be forgotten that such cases call for a very searching scrutiny. Hunger and thirst are very imperious appetites, and the number of patients must be very small whom even the fear of death would restrain from yielding to their clamorous demands.

The chapter on Intestinal Obstruction is particularly valuable for the clearness of the diagnostic differences which it describes as existing between the several forms of the disease. An article on Functional Obstruction admits that "persistent obstipation, accompanied with vomiting of so-called stercoraceous matter, colic, pains, etc., may occur, there is reason to believe, as a purely functional disorder." The author is inclined to this belief because he has observed the affection in nervous women chiefly. The reason is hardly a conclusive one; irregular muscular contraction, which is characteristic of such cases, affects the intestine, as it does all of the muscular organs, and must be very apt to produce invagination, just as we know that it does in the act of death, in children constantly, and not unfrequently in adults. There is at least as much reason why invagination should be overcome under these circumstances as when it takes place in persons entirely free from nervous excitability. Clinical evidence renders the latter in the highest degree probable; for there are instances of persons in perfect health being suddenly seized with all the symptoms of intestinal obstruction, after unwonted muscular efforts, and yet recovering entirely. Among others, Brinton reports such cases, and in one of them, when the patient some time afterwards died of a different disease, "the appendix cæci was bound by adhesion to the brim of the pelvis, and several bridles of adhesion extended to portions of the small intestine at this part; one of them was very long, and had apparently led to constriction, and the previous symptoms of strangulation."

The article on Dyspepsia is very judiciously written; but it more than once enounces the doctrine which we have already ventured to pronounce erroneous—that flatulent distension of the stomach and bowels may be due to "gas secreted or evolved in some way independently of chemical changes in the ingesta." It was a not uncommon symptom among soldiers during the late war, and among them we suspect that it sometimes arose from another cause pointed out by the author, viz., a habit of swallowing air; although it seemed attributable in certain cases to the use of bread made without yeast, the so-called aerated bread. There is doubtless such a thing as scientific cookery, but if this be one of its triumphs, heaven preserve us from becoming its victims! Gastric hemorrhage, we are told, is sometimes simulated by hysterical females, etc. We remember being very much amused with the learned explanations suggested by an eminent physician

of the case of a young lady who excited the greatest alarm in her family by occasionally spitting blood, which was always in small quantity, of a dark colour, and mingled with saliva. The catamenia were regular. For these reasons, and because there was no discoverable organic cause of the hæmoptysis, we assumed that it was voluntarily produced. Not long afterwards the patient gave unquestionable evidence of hysterical insanity, and she was removed to a hospital, where she still remains, after the lapse of six or seven years. Among the causes of gastralgia the author omits one of the most frequent, chewing tobacco. A curious illustration of the fallacies arising from imperfect observation is furnished in the chapter on Gall-Stones, where the author relates several cases in which patients who had taken large doses of olive oil for the cure of gall-stones were convinced of its efficacy by finding in their alvine evacuations numerous rounded or oval bodies like sheeps' or goats' dung. These were nothing more than the concrete matter of the oil shaped by the intestinal movements. The subject of Diarrhœa is well treated, its different forms being plainly characterized. Some interesting remarks are made on fatty diarrhœa, without, however, clearing up the obscurities of the subject. Diarrhœa from exposure to cold is attributed to the irritant action of undigested aliment in the large intestine; it is much more probably due to a suppression of the cutaneous exhalation. Intestinal hemorrhage, or enterorrhagia, is briefly but accurately described, according to the causes producing it. "Like gastric hemorrhage," the author remarks, "it may be vicarious of menstruation." This statement is not quite consistent with that already referred to in connection with diseases of the stomach. A case lately fell into our hands in which a lady was pronounced by her medical attendant to be dangerously affected with dysentery, because, on the proper date for menstruation, the previous period having passed without discharge in consequence of her exposure to cold, she had a profuse hemorrhage from the bowels. A mildly tonic treatment was used. At the subsequent epoch her menses reappeared, and her health was fully restored. The treatment of constipation, one of the most serious of the minor diseases, because it often leads to such an impairment of the health as to destroy the patient's happiness and usefulness together, has always appeared to us exceedingly difficult. The infarction of the bowel is easily overcome indeed, but seldom permanently, for the habits that occasioned it originally can rarely be given up for more wholesome modes of living. Although the author has little to propose in regard to this subject that is new, yet his views of the relative values of medicines and their modes of application, are very sound and judicious. On two points especially we are of his opinion—first, the danger of habitually using enemata; for the torpid bowel, like other sluggish organisms, will soon cease to do for itself what others volunteer to do in its stead; and second, the utter uselessness of belladonna as an aperient, in spite of the emphatic and confident eulogies of Trousseau.

In the article on Colic there is recommended, among other things, for its treatment a small enema containing a drachm of laudanum, and the advice is given to administer double this quantity an hour later, if relief is not obtained from the first dose. These doses appear to us exorbitant, and we cannot wonder that the author, after lauding this as "an efficient opiate treatment," should add, "some patients suffer considerably from the after-effects of the opium given, and this, in some measure, compromises the mutual satisfaction of the patient and physician in the success of the treatment." We have frequently treated severe intestinal colic without either

this untoward result or that of occasioning prolonged gastric distress; but we have not found necessary doses half as large as those which are mentioned above. The author advises a similar method of administering opiates in cholera morbus. In that affection it is less objectionable, since a large portion is rejected of whatever medicine may be taken. The new fashion of administering the pulp of raw meat in cholera infantum suggests the not unimportant remark that in this manner it is not only quite probable, but very certain that tape-worm may be propagated.

The article on Epidemic Cholera is perhaps not as full as if it had been written under the expectation of a speedy advent of the disease among us, and with the light which the progress of the present epidemic has thrown on the method of its propagation. With these facts before him the author would scarcely have stated that "imported cases in situations where the disease had not previously existed do not lead to its diffusion;" nor that it is neither contagious nor infectious, particularly when it is admitted to be "portable," which is surely the same thing as its being either infectious or contagious, or both at once. If there is any fact in the history of cholera diffusion established above all others, it is that no case of the disease can arise independently of preceding cases, and the whole weight of evidence goes to prove that the disease is propagated by the excretions of the sick, and mainly by their infecting water which is used for drinking. We notice one omission, which, in the light of these propositions, is a grave one; we mean the diagnosis of epidemic from sporadic cholera. The identity of their symptoms is so perfect, except in degree, that this fact alone should, we think, have sooner convinced physicians that the immediate cause of the former is, like that of the latter, to be found in the action of some morbid cause upon the gastro-intestinal tract. In the one case, indeed, ordinary crude ingesta suffice to develop the specific phenomena; but in the other a special poison, which has been communicated successively by man to man, from the banks of the Ganges to the United States. The author dwells on the extreme importance of meeting the premonitory symptoms of cholera, the precursory diarrhœa, that is, by small doses of opium and astringents, among the latter of which, however, he omits mentioning the most valuable, as it was shown to be by the British Reports, simple chalk mixture, with or without tincture of kino or catechu and laudanum. In the fully developed disease, before collapse, he would rely mainly upon opiates in large doses; indeed, he recommends a grain of a salt of morphia, to be repeated at intervals of from half to three-fourths of an hour, if the first doses are quickly rejected. The dose mentioned is equal to six grains of opium, and we are constrained to say that it is excessive. It is true, as our author states, that the system, even in the early stage of the disease, is not readily affected by opiates; but, as this depends upon the greater or less absorbent power of the stomach, which cannot easily be estimated, we should shrink from incurring the risk to which we believe the patient would be exposed by such doses. Under the circumstances, the hypodermic injection of a solution of morphia in smaller quantities would seem to be greatly preferable. Among medicines, the author places exclusive reliance upon opium in the first stage of developed cholera. Not a word does he say of calomel and the thousand other remedies vaunted as specifics in this stage, in doing which he displays that wisdom which results from a careful study of the results of treatment in epidemic cholera. In addition, he lays down the important precept to keep the patient perfectly at rest, and give him very small quantities at a time of cold water, and occasionally a little spirit.

Nothing can be simpler than the treatment of this terrible disease; that is to say, in no other disease are the limits of medical power more distinctly marked, or the agents through which it can be exercised more definitely known.

Among the symptoms of acute general peritonitis, one is mentioned which has not, we think, been noticed by writers upon this subject. We allude to priapism, which was first described as a symptom of the disease by Dr. Rogers, of Louisville, and of which the author himself observed two examples. We met with it a year ago in a case of peritonitis from intestinal perforation, but at the time regarded it as a merely accidental phenomenon. Cold is admitted to be a cause of this disease, although not a frequent one, and reference is made to the liability to its attacks of persons who are obliged to work immersed in cold water. On the other hand, rheumatism limited to the abdominal muscles, it is said, must be exceedingly rare. We should be disposed, rather, to adopt the converse of these propositions as true. We have seen very many cases of muscular rheumatism of the abdominal walls, and never but one which had any claim to be considered simple idiopathic peritonitis; and even in that case the discharge of a hog's bristle per anum, in our judgment, set the claim aside. In one word, we believe, with Habershon, that peritonitis is *never* idiopathic in its origin. It is to be suspected that not a few cases of peritonitis, regarded as idiopathic, were really examples of epidemic erysipelatous peritonitis, which was first described as it occurred among children, by Abercrombie, we believe. In the treatment of acute peritonitis the author rejects the use of depletion, purging, and mercurials, and relies on opium alone, for which we are certainly not disposed to censure him, believing, as we do, that this single medicine secures all of the good which is attained by the compound treatment into which it enters along with the first mentioned agents. His remarks upon this subject will repay the reader's attention.

The article on Ascites, or, as it is called by the author, Hydro-Peritoneum, is a very excellent and practical one; but we take exception decidedly to his speaking of the operation for its relief, paracentesis abdominis, as a "trivial one," and of its repetitions as "innocuous." In not a few cases acute peritonitis follows this operation; it is painful, and to persons of sensibility it has a shocking appearance. Still it is often imperatively necessary. A modification of it is sometimes possible, when the integument covering the umbilicus becomes gradually distended in the form of a round fluctuating tumour. A painless puncture with a sharp lancet then suffices for the evacuation of the fluid. In a case of this sort we performed the operation nearly thirty times during two years before the patient's death. Neither our author, nor other contemporaneous writers, so far as we know, allude to this possible alternative for the more painful procedure; but it is referred to in one of the Society Memoirs published in Great Britain in the last century.

The chapters on Diseases of the Liver require no particular notice except as being written with the most recent light thrown upon the subject, and as containing a protest against mercury as the specific remedy for hepatic disease. While denying it this virtue, the author falls into the error of regarding the usual brown colour of feces as produced by the presence of biliary colouring matter. If this were so the contents of the ileum should be darker than those of the colon, whereas the reverse is the case, as every one knows.

Congestion of the Brain is first considered among diseases affecting the

Nervous System. The author is of opinion that experimenters have fallen into a gross error in concluding that the cranium always contains the same quantity of blood, and that congestion expresses not a positive increase of blood in that cavity, but only a relative disproportion between the arterial and venous blood. He might have cited, in this connection, the cases and experiments used to illustrate the physical condition of the brain during sleep, and which show that the most ordinary and tranquil excitement causes the brain to project from its bony case wherever resistance is removed. In another place, speaking of meningeal apoplexy, he might have referred to the remarkable case of the great statesman, Daniel Webster, in whom a membraniform fibrinous coagulum, resulting from a violent fall, covered the convexity of the brain for many months before his death, and with but little disturbance of his extraordinary intellect. The whole of the article on apoplexy appears to us logical and sound, and none the less so that it does not offer solutions of some of those knotty questions which concern functional and physical diseases of the brain and their distinctive phenomena. As might be expected, the author would restrict the use of blood-letting in apoplexy within very narrow limits. He points out accurately the conditions which contraindicate it, without so explicitly denoting those which call for its use. Yet he says plainly that if the attack be due to active congestion, and the heart be acting with normal power, the life of the patient may depend upon the prompt abstraction of blood; or again, if venous congestion of the face is marked, if the pulse be full, and no paralysis exist, bleeding should be employed. These conditions call imperatively for bleeding; but there are many, more or less compounded of these, and with paralysis, which will scarcely be benefited without it. Tact and judgment are never more necessary than here; but we are of opinion that in doubtful cases it is safer to bleed. The immediate effects, closely watched, will generally show whether the operation tends to good or evil.

The article on Sunstroke gives a fair exposition of the different pathological conditions which bear this name in common. A remark is quoted from a reporter of numerous cases of the affection, that a large proportion were attacked shortly after dinner, which would seem to imply some relation of cause and effect between the two events. As the period mentioned is precisely the hottest of the day, it is perfectly natural that the morbid effects of heat should then be most severe.

The article on Tuberculous Meningitis is, perhaps, proportioned in extent to the whole Treatise, but it is much less complete than would be desirable. The author is disposed to refuse a tuberculous nature to the minute granulations which are found in the membranes of the brain after death from this affection; but, as he elsewhere appears to regard as tubercles, even in the lung, only the crude yellow bodies, so called, his judgment must be accepted with this understanding. He does not even indicate a plan of treatment, doubtless because he regards the "termination as almost invariably, if not invariably, fatal." This is a more unfavourable view of the subject than appears to be warranted by medical records.

Cerebro-spinal Meningitis is treated of under its appropriate name, or, at least, under a more proper one than the popular title *spotted fever*, a title which was bestowed upon it by the vulgar during its first epidemic appearance in this country, but which was even then condemned as inapplicable to the disease by all physicians of authority who described it. It is to be regretted that the author does not appear to have been acquainted with the great mass of facts contributed to the history of this

affection, both abroad and at home, and especially with those belonging to the first recorded epidemic of the disease in this country between 1809 and 1815, and some of the more complete histories published of its recent appearance, among which should be noticed that of Dr. Upham relating to an epidemic in North Carolina, the fullest account by far of its symptoms and lesions. He refers to an article, by an ingenious author, in which its identity with typhus is advocated. This has also been done in England by Dr. Murchison, who does not seem, however, to have found any one to agree with him. In his elaborate and almost exhaustive treatise on fevers, not a word is to be met with in the history of typhus which even suggests the possibility of cerebro-spinal inflammation occurring as a complication, even the most occasional, of that disease. Indeed, he now confesses as much, and claims to have been enlightened by the occurrence of several cases of typhus in which the symptoms of such an inflammation were met with. Now, it may fairly be asked which is the more probable—that no writer on typhus, since the days of Huxham, should have described cases of that disease with cerebro-spinal symptoms, or that Dr. Murchison should have exaggerated the importance of the lesions occasionally found within the cranium in typhus fever? It is well known that in many cases of typhus there is a profuse secretion of serum beneath the cerebral membranes, and more or less cloudiness of these latter. But there is a world-wide difference between these results of, for the most part, exaggerated functional activity, with imbibition of serum by the macerated membranes, and the effusion of inflammatory lymph and pus which is characteristic of cerebro-spinal meningitis. Dr. Mayne, of Dublin, we imagine, was as familiar as possible with typhus; but when, in 1846, he encountered an epidemic of cerebro-spinal meningitis, he at once recognized it as a different disease, and called it by its proper name. So, too, did Dr. Law in 1849 and 1866. They also pointed out one distinguishing feature, which, for Irish practitioners, must alone have been sufficient to prove the disease a different one from typhus; it was not propagated by contagion. Dr. Murchison knows, as well as any man living, that this statement, if well grounded, is fatal to his notion that the epidemic in question is a form of typhus fever, and he, therefore, strives to refute it, by showing that certain of the epidemics occurred under the same circumstances as those in which typhus appears. Nothing can be more inaccurate than this. If the disease has sometimes shown itself in crowded barracks, and even been confined to them, in numerous other cases it has prevailed in the most healthy localities, and attacked indiscriminately the poor and the rich, those who were the worst and those who were the best provided with the comforts of life. Such has been eminently the case in this country. Dr. Murchison suggests that the occurrence of typhus fever and of cerebro-spinal meningitis in the United States during the late war favours the opinion of their community of origin and identity of nature; but while typhus was generated to some, and indeed a very slight, extent by crowding, bad ventilation, and filth during the war, the other disease commenced several years before the war; commenced in the midst of peace and plenty, and in places as salubrious, by situation and the character of their inhabitants, as any in the world; began in New England, and then took fresh starting-points in Central and Western New York, whence it gradually advanced southeastwardly along the valleys of the Alleghanies, poured over Eastern Pennsylvania and Middle New Jersey, and down through the Atlantic States to North Carolina. It also extended westward along the borders of the great lakes to

Chicago. But it did not cross the mountains, or accompany the ceaseless caravan of human beings, citizens, and soldiers that filled the great highway through Pennsylvania; nor did it yield to the attraction of the crowded, squalid, and filthy portion of the population of New York City, as typhus must inevitably have done. In fact, its ravages, in proportion to the population among which it prevailed, were greater in salubrious country neighbourhoods than in large cities; and even in these, as in Philadelphia, its victims, so far from being found in almost the only localities where typhus has ever prevailed, in the negro district and in the almshouse, were selected from among the classes who live in plenty, and in the cleanest and most airy streets, and from among individuals who had everything in their persons and in their surroundings to secure health and long life.

Nor is the indirect proof derived from its non-contagiousness less weighty as an argument against its identity with, or even its affiliation to typhus. Of all who have written upon the subject from actual observation, whether among those who studied the first or the last epidemic in this country, or among those who have published the results of their accurate observations in Europe, not a single one has pronounced the disease contagious. Even the latest evidence that has reached us, Prof. Niemeyer's description of epidemic cerebro-spinal meningitis in the Grand Duchy of Baden, and the report presented to Parliament, by Dr. John Burdon Sanderson, on the disease as it prevailed about the lower Vistula, afford not the slightest countenance to such a belief, but, on the contrary, explicitly refute it. And shall we, then, be told that such a disease, which every one competent to express an opinion pronounces to be incommunicable by contagion, is identical with typhus fever, the most contagious disease in the world except smallpox?

It were easy to demonstrate that typhus and cerebro-spinal meningitis are diseases of widely different symptoms, whether considered in their entire course, or in respect to their individual phenomena. But we have room to notice only two or three. The characteristic mulberry rash of typhus is familiarly known to be a true exanthem, on its first appearance elevated slightly above the surface of the skin, and disappearing under pressure. It is only at a later period that this eruption, which may readily be mistaken for that of measles, is converted into petechiæ, that is to say, into spots which are really ecchymoses, and which no longer pale or disappear when pressed upon.

The eruption of spinal meningitis, is petechial from the first, *i. e.*, is formed of true ecchymoses in the tissue of the skin, and at no period of its existence changes under pressure. In other words, it presents precisely the appearances of the ecchymoses which characterize a large number of blood diseases, and even phlegmasiæ of a low type. Moreover, this eruption, such as it is, is so far from belonging essentially to the disease that it is present in less than one-half of the cases. In the United States, where it has most frequently been met with, this proportion perhaps overstates the truth; while in many European epidemics its occurrence must have been quite exceptional, for it is not even mentioned by their historians, and another but almost insignificant eruption, herpes labialis, is given as the sole cutaneous phenomenon, and even as being a distinctive characteristic of the affection.

Another phenomenon presents so striking a contrast to the symptoms of typhus, that its mere mention will be almost sufficient, viz., opisthotonos. In no treatise upon typhus fever is this symptom even so much as mentioned as belonging to that disease, not even in the work of Dr. Murchison,

nor even in his more recent communications where he claims the existence of meningitis as an occasional complication of typhus.

The only other point to which we shall allude out of many that present themselves, is the state of the blood in the two affections. In typhus it is well known the blood is darker and more liquid than natural, and the proportion of its fibrin is diminished in a marked degree. But the analyses which have been made of this fluid in cerebro-spinal meningitis exhibit a very different character. In the examinations by Dr. Ames, during the Montgomery epidemic, the proportion of fibrin varied between 3.64 and 6.40 in a thousand parts; and during the epidemic of 1840–41, at Strasbourg, Dr. Tourdes found the proportion of this constituent of the blood to vary between 3.90 and 5.63. In each case, therefore, the minimum proportion of fibrin was greater than the average proportion of that constituent in healthy blood. The blood in cerebro-spinal meningitis, then, resembles that of an inflammatory disease, and not that of a toxæmic condition like typhus. The petechiæ and vibices, which occur in a minority of the cases, and which appear to have suggested the idea of its relationship to typhus fever, are not characteristic of typhus fever alone, nor even of those forms of disease alone in which the typhoid type predominates. On the contrary, they are far more strongly marked in scurvy and in purpura, in neither of which does this type present itself, unless in exceptional cases. In the former, at least, the proportion of fibrin is above the normal standard.

We might carry this demonstration further did it seem necessary to render the argument more complete; we might even prove that cerebro-spinal meningitis does not present the typhoid state in a majority of the cases; and, indeed, very rarely in those which terminate favourably. It would seem that the phenomena of this state, occurring in connection with petechiæ and ecchymoses, have led some persons into the error which we have endeavoured to expose. But neither that state nor any special appearance of the skin is characteristic of the disease. Many cases, towards the close of each annual epidemic of meningitis, have presented this condition in previous epidemics as well as in the existing one. Even while writing, we have under our care a lady of robust health who, without the slightest premonition, was attacked shortly after breakfast with so violent a pain, shooting from the nape of the neck through to the forehead, that, although a person of remarkable fortitude, she shrieked with anguish. Her sight became affected; there was slight strabismus, with pain and stiffness along the spine, neuralgic pains in the limbs, and obstinate vomiting for many hours. Profuse depletion by cups and purgatives was used with good effect; blisters to the spine, and opium and quinia were subsequently prescribed, followed at a later period by the iodide of potassium. Three weeks have been required to establish full convalescence. Now, in this case, there was neither delirium nor coma, and not the slightest trace of discoloration, nor any excessive heat of the skin. Will it be pretended that this was a case of typhus fever?

Still more recently, and while these pages were passing through the press, a female was brought into our wards at St. Joseph's Hospital, of whom the following account was obtained. She was about twenty years of age, of large and well developed frame, and had a remarkably clear skin. While hanging clothes out to dry, she was attacked suddenly with a severe pain in the head. Soon afterwards, she was carried to the hospital, where her chief complaint was excruciating pain in the head and back of the neck, and this, rather than coma or delirium, rendered it somewhat difficult to communi-

cate with her. From the first, her head was strongly retracted, and her hands, and, ultimately, both the upper and lower extremities, were mottled as if by venous congestion. There was no eruption whatever. She lay, by preference, in a prone position; her pulse was about 100; her skin warm, but not hot; her abdomen was not tympanitic, and her bowels were confined. She died at the end of a week; and half an hour before death, she was not comatose, but understood what was said to her; she was then unable to swallow. There was neither convulsion nor paralysis. On examination, 24 hours after death, the dependent portions of the body were deeply purple, but the anterior surface was perfectly pale. The upper surface of the brain was unusually dry, but the veins were turgid. At the vertex, on both sides of the longitudinal sinus, there existed strong adhesions by lymph. A deposit of semitransparent and very firm lymph existed upon the optic commissure, and extended, but less in thickness, over the pons Varolii and along the front of the medulla oblongata. It ceased at the cervical portion of the cord, but here the membrane was dull and clouded. Lymph existed also in the fissure of Sylvius, on either side. The central cavity of the brain contained but little fluid; but the right optic thalamus was pulpy, and the left softer than natural. There were no tubercles. The blood was quite destitute of coagula, and the inner surface of the spinal canal was stained almost black.

We cannot quit this subject without adverting to the fact that the successive epidemics of meningitis have occurred almost simultaneously in the United States and Europe. While, during 1814–15, it was touching its decline in this country, it prevailed in the South of France. The most extensive epidemic of it in France, Italy, Algiers, Gibraltar, &c., from 1838 to 1847, had its counterpart in the epidemic of our southwestern States, between 1842 and 1850. So, while the disease spread through this country from 1857 to the present time, several local epidemics of it occurred in Germany and in Ireland between 1863 and 1866.

But we must hasten on. The different forms of paralysis are treated of concisely, and very clearly considering the difficulties inherent in the subject, and the conflicting results of clinical experience, and still more of physiological experiments. A very curious case is related of permanent paralysis of the sensibility of the rectum and anus following a fall upon the buttocks; yet there was no paraplegia, no paralysis of the bladder, nor any impairment of the sexual function. Under "hemiplegia" the difficulties which involve the diagnosis of its proximate cause are very well described, and consequently those which environ its prognosis. Thus, although the author describes a *functional* hemiplegia, which he admits to be rare, the existence of such an affection must be inferential only. However that may be, it is certain that cases of paralysis sometimes occur, and that not in hysterical, nervous, or even young, persons, which have every aspect, at first, of a central and organic origin, but which speedily and perfectly recover. Two cases are related, both of old men, in which, without any appreciable cause, more or less complete hemiplegia occurred, but disappeared entirely in the course of a few days. A similar case recently occurred in our own practice. A gentleman nearly seventy years old, but originally of a vigorous constitution, consulted us for dyspeptic symptoms, and slight, but general, muscular rheumatism. While examining him, a marked irregularity of the pulse was observed, and on auscultating the heart its impulse was feeble, and its first sound wanting in clearness. A week later, all of these phenomena had disappeared, and the usual health

seemed restored. A few mornings afterwards, while performing his ablutions, he suddenly found himself deprived of power in the left arm, and that of the left leg was slightly impaired. On attempting to call, he was unable to articulate, and swallowing was almost impossible. The paralysis diminished within one hour sufficiently to permit the patient to travel some ten miles, by steamboat, to the city. When we visited him, it had still further abated, and the speech was perfectly intelligible. Nevertheless, remembering the symptoms on his previous visit, we were disposed to feel apprehensive of the result, and therefore enjoined great circumspection. In the course of three days, however, hardly a trace of the paralytic seizure remained. In this, and in our author's cases, we should be inclined to suspect the temporary obstruction of an artery by a coagulum or embolus.

A remark is made under "Paraplegia" which has an important medico-legal bearing, viz., that "complete paraplegia, affecting both sensation and motion, is not incompatible with sexual passion and procreative power." An exceedingly interesting illustration of this statement is given at p. 573. Progressive locomotor ataxia is briefly, but clearly, described. A singular case is referred to—

"Which was under observation for several years at Bellevue Hospital. Whenever the patient attempted any volitional acts, the contortions of the limbs and body were such that he appeared to be performing for the surprise and amusement of the spectators, and it was difficult at first for the medical class to repress manifestations of mirth."

These words accurately describe a case which, in our student days, was under treatment at the Pennsylvania Hospital, where it was regarded as a case of chorea.

The functional nervous affections are discussed by the author with great plainness, and, as we think, with precision and accuracy; neuralgia, epilepsy, and hysteria occupying the largest space. Two very interesting cases of hysterical coma, or trance, are given, the first of which is singular from its occurrence in a male. The article on delirium tremens is a very good one; but it confounds this term with *mania à potu*. The former is a consequence of the withdrawal of alcoholic drinks; the latter is the direct effect of continued and excessive indulgence in them, and is synonymous with *delirium ebriosum*. The precepts for their treatment are, for the most part, sound. We especially agree with the statement as to the utility of muscular exercise carried to the point of fatigue. When it can be systematically used, neither opium, nor tartar emetic, nor, still less, digitalis, will be required, and alcohol very sparingly. The worst possible treatment of the disease is to shut its victim in his chamber.

Diseases of the urinary organs are treated of rather briefly; but of albuminuria, a full, accurate, and very interesting account is given. The same may be said of diabetes. A case is mentioned of the spontaneous cure of this disease, which is usually regarded as inevitably fatal. We have under observation a similar case, in which enormous quantities of sugar in the urine were replaced by an equally large proportion of urea, which also ultimately declined nearly to the normal standard.

The concluding section, devoted to fevers and other general diseases, is one of the best in the work. The labours of the author in this field are so well known, that any detailed account of them here may be dispensed with. It is hardly necessary to state that he adopts a humoral pathology, as alone sufficient to explain the phenomena of these diseases. This, which was long ago an admitted principle, for a time became heretical, but once more occa-

pies its place in the orthodox medical creed. Febricula, or ephemeral fever, is confounded by the author with simple continued fever, which is a very different affection, and one which is often mistaken for mild typhoid fever. The consideration of typhus is not sufficiently separated from that of typhoid fever, particularly as the author is at pains to point out, as he does very clearly, although too briefly, their non-identity. In his statement that "neither typhus nor typhoid fever, as a rule, is experienced twice," he places the two diseases on the same level in this respect, and improperly, as we conceive; for while the recurrence of typhus is not uncommon, a second attack of typhoid fever is extremely rare. In the treatment of typhus, the author infers, from comparative trials which he made, that the administration of sulphuric acid is capable of diminishing the mortality of the disease nearly one-half. Other acids were used by various other physicians, with alleged benefit, which was attributed to the action of the medicine in counteracting the alkalinity of the blood. We should imagine that the removal of an effect is not very apt to destroy, or even to influence, a cause. *If* the acids do good, a more reasonable supposition, we think, ought to be invoked to explain it. The author advises the administration of tartar emetic in the active delirium of typhus, in imitation of Dr. Graves. But he does not recommend doses more than half as large as those prescribed by the great Dublin physician. It is perhaps not irrelevant to notice that in most of the cases in which Dr. Graves employed this medicine, leeching and purging had previously been used, the head had been shaved, and the neck blistered; and also to inquire whether the delirium was not, in some degree at least, due to the evacuant and exhausting treatment. It may also be inquired whether the cold douche or the warm bath would not have been more efficient and less hazardous? The author furnishes some exceedingly gratifying statements regarding the beneficial influence of pure air in the treatment of continued fevers, and illustrates them by results obtained during the late civil war. While describing the incomparable benefits of alcohol in these affections, he is careful to warn against its premature employment. The customary mode is often more injurious than useful. Nature is overstimulated while she is still competent to her task; and when, at last, exhaustion overtakes her, stimulants are unavailing to arouse her. A doubt is expressed as to whether "erysipelas" is a correct synonym for the epidemic disease known as "black tongue," inasmuch as the eruption is very far from constant; indeed, it occurs in only one-sixth of the cases. The criticism appears to be well grounded. Among the contrasts between yellow and remittent fever, one is omitted by the author which appears to us of primary importance. The former disease prevails exclusively in localities bordering upon salt water, the latter in the neighbourhood of fresh water chiefly. The eruptive fevers are fully and accurately described. The communicability of scarlatina by the sick and by fomites is very positively maintained, and several striking illustrations of it are presented. This opinion agrees with that of the most authoritative of recent writers upon the subject, but it is strongly dissented from by others. The article on diphtheria is remarkable for its excellence. It is curious to observe how the author, in common with nearly all judicious practitioners, rejects local applications, except as palliatives, notwithstanding the scarcely qualified eulogy which they once received from such eminent physicians as Bretonneau and Trousseau. He adopts the more rational and approved method of sustaining the system until the morbid process against which it is contending is exhausted. Articles on rheumatism, gout, scurvy, and purpura close the volume.

In the review which we now bring somewhat abruptly to a conclusion, we have abounded in criticism rather than in eulogy. This we should not have ventured to do, had not the defects, in proportion to the merits, of the work before us, been so minute. The latter speak for themselves, and will readily be appreciated by the judicious reader; the former might pass unperceived or uncorrected, and so tend to damage the author's reputation for certain admirable qualities as a medical teacher, which a just estimate of his treatise cannot fail to confirm. A. S.

Art. XXI.—*The Transactions of the American Medical Association.* Instituted 1847. Vol. XVI. 8vo. pp. 869.

It has been suggested—and the suggestion comes to us from many quarters—that the putting forth annually by the American Medical Association of its bulky volume of *Transactions* may not be productive of an amount of good to the profession and of credit to the Association, by any means adequate to the labour and expense incident to its publication. It is very certain that the series of sixteen volumes that have appeared comprise a number of reports of a highly interesting character, with many scientific and practical papers of unquestionable value. Nevertheless, were a selection to be made for publication from among the several reports and essays read annually before the Association, by a committee, of which the members shall have the requisite talents and information, and sufficient independence of character to act with impartiality, a volume might be issued, each year, more creditable to the Association and more useful to its members as a work of reference. It is true that, by this plan, the yearly volume of *Transactions* would be very considerably diminished in bulk; but in the same proportion it would, we are satisfied, be increased in intrinsic value. The Association was not organized for the preparation and publication of mere compilations on different medical topics, and these compilations not always prepared by those who are the best qualified by talents and experience to separate the true from the false—the established from the conjectural—in theory or in practice. The leading objects of its organization were of a much higher character—to secure a uniform and more enlarged and efficient standard of medical education throughout the country; to promote a greater originality and independence in our medical literature; to excite a spirit of original and cautious investigation, whether for the purpose of testing the validity of received views and modes of practice, or for the development of new truths in one or all the branches of medical science and medical art; and of arriving, if possible, at a more intimate and complete knowledge of epidemic, zymotic, and endemic diseases.

The address of the President, Dr. N. S. Davis, of Chicago, Ill., in the present volume, is a very able, business-like paper. Its main subjects are a sketch of the past history, the present organization, and future prospects of the Association. The suggestions thrown out by Dr. D., in the discussion of the latter two questions, as to the proper sphere of operation for the Association, and the means best adapted to increase its influence for good, and insure its permanency, are pertinent and practical, and demand the careful consideration of all its true friends.

Following the Address is a report, by Dr. A. Fisher, on the use of the sulphites of lime and soda as remedial agents. The original report was presented at the meeting of the Association in 1865, but being by accident omitted from the printed *Transactions* of that year, an additional series of facts and observations have been added to it, and the report inserted in the volume before us. As the subject of the report has recently attracted some attention, we give the general conclusions to which the author has been led from personal observation.

"1. That the sulphites of soda and lime can be given to patients suffering from zymotic diseases, in large quantities, and continued for a long time without producing deleterious effects.

"2. That, in accordance with Dr. Polli's experiments, the sulphurous acid is disengaged from the alkaline base in the system, permeating it in every part, thereby preventing fermentation or decomposition of the blood.

"3. That they do not destroy or decompose the poison in the system, but prevent its deleterious action on the blood, and consequently the tissues, until it is eliminated from the system.

"4. That the quantity prescribed should be in proportion to the malignancy of the disease; that is, the more hopeless and malignant the case, the greater should be the quantity administered in a certain time.

"5. That these remedies should not be too suddenly withheld in bad cases, but continued until the poison is carried out of the system by the emunctories.

"6. That the effect of these remedies, in well-marked cases of blood-poisoning, is imperceptible for the first few hours, but by continuing them for a day or two, the secretions become improved, and the patient is relieved of the morbid symptoms.

"7. That these remedies will not cure inflammation of an organ already established, though in cases where they are indicated, they prevent the deleterious effect of the poison until the inflammation subsides, or is relieved by appropriate remedies.

"8. That the use of these agents will not prevent the use of other remedies indicated in the particular case, unless chemically incompatible.

"9. That these remedies are generally well retained on the stomach, though the dose is large, and the sulphurous taste is disagreeable to some patients.

"10. That the more malignant and hopeless the case, the more perceptible and satisfactory will be the effects of these agents, unless the case is beyond the reach of remedies."

Among the reports presented to the Section on Practical Medicine and Obstetrics is a very elaborate one on the causation, course, and treatment of insanity in women, by Dr. H. R. Storer, of Boston, Surgeon to the New England Hospital for women, etc. etc. The report includes many questions of the deepest importance to all who are interested in the subject of mental derangement as it presents itself in the female.

The leading object of the present report is to establish the truth of the following positions, advanced by Dr. S. in a paper published in the preceding volume of the *Transactions* of the Association, namely:—

I. That in women mental disease is often, perhaps generally, dependent upon functional or organic disease of the reproductive organs.

II. That in women the access or exacerbation of mental disease is usually coincident with the catamenia, periodical access, temporary suppression, and final cessation.

III. And, therefore, that the rational and successful treatment of mental disease in women must be based upon the preceding propositions, which Dr. S. claims to have established; 1st, by many analogies, anatomical, physiological, and pathological, in the cerebral manifestations of the human female and that of the lower mammals; 2d, by clinical observation, and by

the results of autopsies of the insane, both in private practice and when made with equal care and impartiality in insane asylums.

That Dr. S. has succeeded in establishing the fact that insanity in the female has, very frequently, its origin in her uterine system we scarcely believe will be doubted by any one who will carefully and candidly weigh and analyze the vast amount of evidence he has adduced in support of his position. The truth of that position being admitted, it follows as a necessary consequence that in the treatment of insanity in the female, in many instances, means of a direct and physical character will be demanded.

It is not our intention to attempt an analysis of the report before us, nor to enter upon any special criticism of the views advanced by Dr. S. To accomplish the first in such a manner as would do full justice to the author and furnish to our readers any satisfactory idea of the labours of Dr. S. and of the amount and character of the evidence advanced by him in support of the conclusions at which he has arrived, would occupy a space in this Journal far greater than could be afforded; while, in a critical examination of the report, we should perchance find ourselves compelled to differ somewhat from the author in respect to certain of his views on a few of the questions involved in the general subject of the causation and treatment of insanity in the female, yet in respect to his leading proposition that, in a large proportion of the cases of insanity in women her sex is to be considered the exciting or the continuing cause of the malady, and that, consequently, in our treatment of insanity in the female our attention must be directed to the condition of her uterine system with the view of detecting and removing any abnormal condition which may there exist, our only criticism would be an expression of our entire assent to the truth of the views advanced by the author, adding to the evidence he has adduced in their support that of our own personal experience. We have repeatedly been able to trace insanity in the female, of a most decided character, to displacements and disease of the womb, and in not a few cases have seen it materially improved or entirely and permanently disappear where we were able to restore the uterus to its normal position or remove the disease of which it was the seat. We wish to be distinctly understood as by no means referring insanity in the female invariably to morbid conditions of the uterine organs. Even when the insanity is traceable to this source, the trouble in the sexual organs will, we believe, be found to act, not as the original cause of the mental affection, but merely as one of the sources through which an inherent predisposition, hereditary or acquired, is excited into action.

Four papers were presented to the Section of Medical Jurisprudence and Hygiene. Of three of these the subject is smallpox and vaccination. We have first the report of a Committee on the Value and Necessity of Vaccination and Revaccination for the Eradication of Smallpox. This report is one of deep interest, not merely to the medical profession, but to the public at large. The conclusions at which the committee have arrived are in the main correct, and are sustained by a mass of evidence the most convincing. Effectual vaccination with pure matter in early infancy, and revaccination at a later period and upon the occurrence in any locality of variola, are, most unquestionably, not only the sole means for the prevention of smallpox, but means invariably effective. For many years, and in various ways, we have endeavoured to enforce upon physicians of our own State, and upon the public generally, the importance of the views so ably set forth in the present report.

In the report on the Propriety and Necessity of Compulsory Vaccination, by Dr. J. M. Toner, the views set forth are sound and appropriate, especially in regard to those things an attention to which is absolutely necessary in order to secure a permanent and effective vaccination. But the main subject embraced in the title of the report appears to have been entirely lost sight of. No series of arguments are adduced to establish either the propriety or the necessity of compulsory vaccination—a subject of vast importance in a sanitary and medico-political point of view.

The paper on Smallpox, its Pathology and Treatment, by Dr. A. Nebinger, of Philadelphia, would seem to be entirely out of place; it belongs properly to the section of practical medicine, and not to that of medical jurisprudence and hygiene. But, wherever placed, it will be found to be an essay of some interest and practical importance. Dr. N. does not believe smallpox to be *essentially* an inflammatory affection—any threatening or destructive inflammation which may spring up in its course he believes to be merely accidental. He considers smallpox, at its height, to be essentially and radically "a suppurative disease." In other words, that it is a malady in which a larger or smaller quantity of pus is generated, accordingly as the attack is more or less severe, and that as a consequence of this generation of pus and the effort of nature to "throw off the diseased portions of the tissues attacked," an erythema or inflammation in the tissues involved, is required to be set up, in order to the successful, perfect, and safe development of the disease, and its passage through its several and oftimes severe and exhausting stages. As a direct deduction from this view of the pathology of smallpox, Dr. N. considers that the treatment of the disease should be "compensative"—As there is a large demand for "plasma" there should be, therefore, a large supply of highly nutritive aliment, with, occasionally, the addition of some alcoholic stimulant. During the initiative or febrile and papular stages of the disease, Dr. N. prescribes an antiphlogistic regimen and treatment—dietetic and medicinal—and only abandons this treatment for one more nutritive and stimulant so soon as pustulation commences.

That variola is due to the presence of a specific morbific poison in the blood we believe there can be no question. This poison nature makes an effort—often successfully—to eliminate from the system by the emunctories of the skin and mucous membrane. As the poison is determined to the surface it gives rise there to a crop of pustules, more or less copious. The fewer of these pustules that make their appearance the milder and less dangerous is the case. It must be evident, therefore, that the treatment appropriate to smallpox is such a one as, while it favours the elimination of the variolous poison from the system, will at the same time diminish the tendency to excessive pustulation. This during the first stage should, to some extent, be antiphlogistic. But, during the suppurative stage, as it has been termed, there cannot be a doubt on the mind of any experienced practitioner that a sustaining diet is very generally if not invariably demanded, in some cases the addition also of tonics and stimulants, in order to promote healthy nutrition and prevent the occurrence of that condition of the tissues which under slight abnormal stimulation has a tendency to promote the formation of pus globules and give rise to even a general pyæmic condition of the system. Dr. N. is in some of his expressions incautious and inexact; this has caused his views of the pathology and treatment of smallpox to be misunderstood and in consequence condemned.

The remaining paper from the Section of Medical Jurisprudence and

Hygiene is by Dr. A. N. Bell, of Brooklyn, N. Y., being the report of the Committee on the Introduction of Disease by Commerce, and the Means for its Prevention.

The report refers to the now fully established fact that diseases spread from their usual places of origin and prevalence only under certain favourable circumstances, and to such localities only as are characterized by meteorological and other conditions closely resembling those in which they have become domiciled. These conditions, it is remarked, have the relation to the diseases produced of remote causes, and are, in general, immutable. Wherever they habitually exist, there, of all places, are to be found exciting causes most likely to usher in an epidemic. When an epidemic is thus once planted, its diffusion by atmospheric agencies is coextensive with the locality and duration of certain favourable climatic conditions. In proof of the correctness of these positions, Dr. B. points to the histories of the three great epidemics, the plague, the cholera, and the yellow fever, which are ordinarily to be found in their greatest intensity, at certain seasons, at the three prominent deltas of the Nile, the Ganges, and the Mississippi, all three deltas having certain leading attributes in common. A rapid sketch is given of some of the more noted and best described of the epidemics of plague, cholera, and yellow fever, showing their rise in certain localities, and their portation from place to place by means of a certain miasm, proper to each, and carried by ships or persons along the great routes of commerce and travel, not visiting every locality along their route, but those only whose atmosphere is in a certain condition as to heat, moisture, and circulation, and loaded with products susceptible, under the influence of the miasm referred to, of undergoing a poisonous transformation. Through the free, elastic, and unpolluted atmosphere of high, dry, and cleanly districts, the miasm, whether of plague, cholera, or yellow fever, migrates silently, unproductive of disease; there the material it is capable of transforming into poison has no existence. In concluding his inquiry into the localizing conditions and meteorological influences governing the introduction of disease by commerce, and the indications for its prevention, Dr. B. remarks:—

"In regard to certain regions and places of great magnitude, where the causes and conditions of epidemics are indigenous, or have become thoroughly acclimated, there appears, indeed, to be but one remedy, viz., to keep as clear of such places during the dangerous season as possible. But, in regard to other localities, where any of the conditions are artificial, our duty is clear—attack the removable causes—do away with epidemic foci, on the one hand by civic cleanliness, and prevent the introduction of disease, on the other, by disinfection."

In the report of the Section on Surgery is embraced a most interesting and instructive paper by Dr. J. Mason Warren, of Boston, on fissure of the soft and hard palate, with a notice of the writer's very important modification of the operation of staphyloraphy as practised for the relief especially of fissure of the soft palate. In cases of extreme fissure, extending far into or through the palatine bones, Dr. W. considers that it is generally sufficient to operate for the restoration of the soft palate and the back part only of the hard palate, leaving the anterior extremity to be covered by a palatine plate, such as is ordinarily used in mounting teeth. To prove that the whole fissure in the bones can be closed by an operation, even in very bad cases, Dr. W. refers to his earlier published cases. Of late years, however, his judgment has become more and more decided against its necessity in the majority of cases seen by the surgeon.

From Dr. L. A. Sayre, of New York, we have an interesting communication on the mechanical treatment of chronic inflammation of the joints of the lower extremities, with a description of some new apparatus for producing extension at the knee and ankle-joints. The immense advantage derived by patients with disease of the hip-joint, since the introduction of mechanical appliances which allow of exercise without discontinuing the extension, has suggested the introduction of similar apparatus in the diseased conditions of the other articulations of the lower limbs, and the paper of Dr. S. is to show the practical value of this principle of treatment in the affections of the knee and ankle-joint, even when these affections have extended to suppuration and caries, and to illustrate it by the narration of cases which have come under his personal observation, with a description of the extension apparatus employed. We shall attempt no analysis of Dr. S.'s paper, as in the case of the preceding paper, to do justice to the author and convey any useful information to our readers, we should be obliged to extend our analysis to a length our limits would not admit. Besides, the text of Dr. S. would scarcely be intelligible without the aid of the illustrations with which it is interspersed.

A case of exsection of the wrist-joint is related by Dr. S. H. Tewksbury, of Portland, Me. Dr. T. is convinced that the results of this operation will compare favourably with the results of exsections of larger joints, and, when the operation shall be more extensively practised with the improvements which will unquestionably be made both in it and in the subsequent treatment, they will furnish statistics of as favourable a character, and be entitled, as other exsections now are, to an honourable and favourable recognition by the profession.

Dr. H. D. Putney relates a case of dislocation of the sternal end of the clavicle, and describes a new apparatus for retaining its reduction. For a description and drawing of the apparatus we must refer our readers to the paper itself.

In a paper by Dr. B. Haskell, of Rockport, Mass., he has attempted, by comparing the experiments of Bell, Mayo, and others, with more recent independent series of observations connected with the three great divisions of the fifth nerve—its ophthalmic, its superior maxillary, and its inferior maxillary, to show that the doctrine which refers motion and sensation to distinct sets of nerves is not founded in fact. We see nothing strictly original in the exposition of Dr. H.

The report of the Section on Meteorology, Medical Topography, and Epidemic Diseases embraces two well-drawn up and voluminous reports, one on the climatology and epidemic diseases of Connecticut, by Dr. B. H. Catlin, of Meridan, Conn.; the other on the medical topography and epidemics of California, by Dr. Thomas Logan, of Sacramento, Cal.

In the first of these reports will be found an able and interesting history of spotted fever from its first appearance in Connecticut, in the spring of 1807, with its symptomatology and treatment. In the report of Dr. Logan we would call attention to the account given of what has been termed in California mountain-fever, and to the remarks of Dr. L. upon malarial fevers in general.

The two following papers are first, the report of the Committee appointed to Memorialize Congress in regard to the Medical Department of the Army; and second, a report of the Committee on the Rank of the Medical Officers of the Navy. Neither of these reports calls for any special comment at our hands. The merits of the important subject to which

they both refer are, we suppose, well understood by the members of the profession generally.

From the Report on Medical Education which follows, we make the following extract:—

"Of the material of education it may be asserted that botany, zoology, comparative anatomy, and medical physics are not taught at all, and that pathology, histology, practical chemistry, hygiene, and medical jurisprudence, including mental alienation, are very imperfectly taught in the majority of the colleges. Ophthalmic, cutaneous, and dental medicine are so completely ignored as to leave these branches almost outside of the profession, either in the hands of pretenders or to be cultivated solely by experts."

The Committee further remark on some branches of knowledge which are not sufficiently urged upon the attention of the pupil.

"1. Forensic Medicine is never treated of to the extent which its importance demands. In the majority of schools toxicology only is descanted on. In a few cases it is a member of the legal profession who lectures, and then it is simply legal medicine which is the subject, and the *laws of evidence* are chiefly dwelt upon. Rarely, indeed, is the important subject of insanity introduced.

"2. The science of physiology is one of so much importance that the student should thoroughly understand it; it is one of the branches of medical education which is not yet so extensively taught and illustrated as it should be. The Committee are convinced that this branch demands a chair for itself in every school, and that it cannot be taught thoroughly along with anatomy. Its connection with chemistry and pathology are so close, that, at the present day, it is more allied with these branches than with anatomy.

"3. The science of chemistry is very imperfectly handled in many of our medical schools and colleges. Some courses are given with a strong bearing towards physics, in others much time is spent unnecessarily on metals and compounds of inorganic bodies, not directly useful to the future medical man; in very few schools, indeed, does the teacher recollect that it is only medical chemistry—the *chemistry of organic metamorphoses*—which is needed to be taught. Every year chemistry forms a more necessary subject of medical knowledge; without a competent acquaintance with it, it is impossible to understand modern physiology. Practical chemistry should be taught in all our medical schools, and attendance on a three months' course should be required from candidates for the degree.

"4. The period of three months to be steadily devoted to dissection was recommended in the report of 1847, and is still required as the maximum period in some colleges, and not required at all in others. As this is manifestly too short a space of time for a student to attain even a respectable knowledge of the human frame, it is recommended that a period of six months, that is, of two trimonthly periods, to be attended during separate sessions, be recommended to the colleges.

"5. In the commercial cities the schools of medicine have become connected with hospitals, and thus conformed to recommendations of this Association made some years ago; but the practice is by no means general, and a further recommendation should be made by the Association to those medical colleges that have neglected to comply with this practical necessity."

The report on American Necrology, by Dr. C. C. Cox, of Maryland, presents brief sketches of members of our profession who have died within the few past years.

The essay to which the prize of the Association was awarded in 1864, is by Dr. L. Elsberg, of New York, its subject is the treatment of Morbid Growths within the Larynx.

If it be really the case that intra-laryngeal growths, altering or destroying the voice of the patients in whom they occur; impeding the freedom of respiration; giving rise to cough, more or less frequent and violent; to

expectoration; to more or less dysphagia, with other suffering, and finally causing suffocation and death; if, we say, such growths are of much greater frequency than has heretofore been generally believed, and we have no reason to dispute the fact, everything which has for its object to render more clear their diagnosis, to simplify their treatment and render it efficient in their eradication, assumes a very high degree of importance.

In structure these laryngeal growths belong most frequently to what are called non-malignant tumours.

"In form they are sometimes rounded, globular, or pear-shaped, sometimes nodulated or in clusters, granular or lobulated, very frequently they are pediculated, but sometimes they are sessile and conical, or irregularly flattened, cauliflower-like, or foliated, or they may appear as circumscribed thickenings of the surface, causing abrupt elevations. Indeed, varying as they do in size from that of a pin's head to the bulk of a hazelnut, a walnut, or even larger, they assume all kinds of forms. The size of a pea is, perhaps, on the whole that most commonly observed.

"They are most frequently found attached to the vocal cords, especially just above their anterior insertion, to the ventricles, and inner surface of the epiglottis. They are met with far more frequently in the upper than in the lower cavity of the larynx, and, what is very curious, oftener on the left side than on the right. They occur more frequently in men than in women, and, though they occur at all ages, from the new-born to the aged, they have been comparatively seldom found in very old persons."

In regard to the etiology of these morbid growths, Dr. E. thinks that upon examining the report of the eleven cases embraced in his essay, there will be found much reason for agreeing with Virchow in regard to the influence of local irritation in their production.

For an account of the present and most approved surgical procedures necessary for the removal of laryngeal morbid growths we must refer our reader to the essay itself.

The prize essay for 1865 is on the Criminality and Physical Evils of Forced Abortions, by Dr. H. R. Storer, of Boston. The essay was written, and the Association has issued it in a form for general circulation. The report is a very good one, showing by incontrovertible facts and arguments that the induction of a forced abortion is, in reality, a crime against the infant, its mother, the family circle, and society; that it is attended with extreme danger, whether immediate or remote, to the mother's happiness, to her health, mental and physical, and to her life; that there is, in reality, no valid excuse for it that can be urged, save when it has been decided to be an absolute necessity by two competent medical men, in order to the preservation of the mother's life. We very much fear, however, that the style of the report is not the best adapted for a production intended mainly for the public ear; Dr. S. has occasionally forgotten that he was addressing a popular and not a medical audience.

We have thus run rapidly through the leading contents of the bulky volume of *Transactions* before us. No one can assert that in this volume of eight hundred and sixty-nine pages there is nothing interesting or valuable to be found; but we have a right to complain that such matter bears so small a proportion to that of a very opposite character—that in each succeeding annual volume there should be so much that is scarcely worthy of comment from being destitute of originality or from representing only partially or inaccurately the established doctrines of the day on the subjects treated of, and the received plans of practice recognized by modern authorities. It will scarcely be denied that papers have appeared in these *Trans-*

actions so far destitute of merit that they would scarcely command insertion in any respectable medical journal. It is high time that all papers and reports presented should not claim an insertion in the printed *Transactions* from the mere fact of their being presented. Let all papers and reports be submitted to a competent committee, and those only which are worthy of publication, either from the originality and apparent truthfulness of the views set forth in them, from their presenting a series of experiments and observations adapted to aid in the settlement of mooted questions in either of the branches of medical science, or detailing new facts and observations illustrative of the etiology, pathology, and treatment of either of the more prominent endemic diseases of the different sections of our country, or throwing light upon the origin, nature, march, mode of propagation, and the means for the prevention or arrest of the more noted of the epidemics which have formerly prevailed and are liable again to prevail in these latter days, be admitted to a place in the printed volume of *Transactions*. Until some plan of the kind is adopted, the *Transactions* published under the sanction and at the expense of the Association will, we fear, every year deteriorate in value and become less and less creditable to the learning, professional talents and practical competency of the delegates to the great "American Medical Congress," and of their entire constituency. D. F. C.

ART. XXII.—*The Physiology of Man; designed to represent the Existing State of Physiological Science, as applied to the Functions of the Human Body.* By AUSTIN FLINT, Jr., M. D., Professor of Physiology and Microscopy in the Bellevue Hospital Medical College, New York, and in the Long Island College Hospital; Fellow of the New York Academy of Medicine, Microscopist to Bellevue Hospital. Introduction; the Blood; Circulation; Respiration. 8vo. pp. 502. New York: D. Appleton & Co., 1866.

DR. FLINT is already favourably known to the readers of this Journal by his contributions upon the organic nitrogenized principles, the phenomena of the capillary circulation, the action of the heart, and, more especially, by his experimental researches into the elimination of cholesterine from the blood, and its discharge from the body. The systematic treatise now before us is the first of a series of four volumes, in which he proposes to exhibit the science of human physiology in its present condition. The other three volumes are to be published annually. This method of publication, so common in Europe, and especially in France and Germany, is more advantageous, however, to the author, than to the student. By confining himself to a limited though natural division of his subject, the former is better enabled to present to the public a treatise brought up fully to the level of existing knowledge. If any considerable interval of time separate the latter from the earlier portions of his work, the former generally require greater or less revision to render them equal to the parts last published. The wants of the student are much better provided for, therefore, by placing in his hands a complete and well-digested work in which the several parts of the subject are not only treated in detail, but their relations to each other or natural dependence distinctly exhibited.

Dr. Flint's work is devoted to the consideration of pure human physiology. It embraces physiological chemistry and the anatomy of the tissues and organs of the body, only so far as necessary for the elucidation of the functions of the organism. The volume before us treats of the blood, the circulation, and respiration. One-fifth of it consists of an introduction occupied chiefly with an account of the more important proximate principles which have been isolated and studied, the general properties and relations of the different classes of these principles, and their relations to nutrition.

The author informs us, in his preface, that in treating of physiology proper, it has been his design to present what is actually known regarding the functions of the body; and in order to facilitate their study, he has generally commenced the consideration of the individual functions with a sketch of the physiological anatomy of the parts. With regard to some of the functions he advances certain views for which he claims originality, and presents, likewise, a new method for the analysis of the blood with regard to its organic constituents.

With respect to the immediate or proximate principles Dr. Flint follows, in the main, the division of Robin and Verdeil. The two great divisions which he proposes comprise, 1st. Substances which enter into the normal constitution of the organized tissues, and those constituents of the fluids which are used in nutrition. 2d. Substances which are the result of the wearing out of the tissues, and are not used in nutrition. The first of these divisions only is discussed in the present volume. The consideration of the second group is to be taken up in connection with excretion. The first group is divided, according to the classification of Robin and Verdeil into inorganic, organic non-nitrogenized, and organic nitrogenized substances. The inorganic principles are treated of briefly, but in language which recommends itself to the student on account of its great simplicity and clearness. The quantity, locality, functions, origin, and discharge of these principles, as far as known, are described with commendable precision, and in such a manner as to develop the prominent fact that in their ultimate destinations and functions they are by no means alike. While some of them, as water, basic phosphate of lime, carbonate of lime, and phosphates of magnesia, soda, and potassa, become necessary constituents of the tissues in consequence of combining molecularly with, and merging their identity into certain organic substances; others, such as the chlorides of sodium and potassium, carbonates of soda, potassa, and magnesia, bicarbonate of soda, and sulphate of soda and potassa, instead of entering into the composition of the tissues as indispensable constituents perform the accessory office in the function of nutrition of regulating by their influence in endosmosis, or otherwise, the nutritive processes.

Under the head of organic non-nitrogenized principles or hydrocarbons our author dwells more especially upon the composition, properties, origin, and functions of the animal sugars and fats, the fatty acids and soaps, the odorous principle of the blood, lactic and pneumic acids, and pneumate of soda. In the section devoted to the consideration of the nitrogenized principles he strongly and with great propriety insists upon the important fact that these principles are the only elements in the organism endowed with life, and that all the vital phenomena which take place in the body depend primarily upon them. They are the agents especially active in the process of nutrition—a process which so eminently characterizes living bodies and serves to distinguish them from inorganic objects. As the accomplishment of this process is the great object of all the organic func-

tions, the chemico-physiological study of these principles is manifestly of extreme importance. Dr. Flint justly observes:—

"To arrive at any idea of their properties the methods of study which have been generally employed by chemists must be discarded, as by these they are reduced to inorganic elements, and treated simply as combinations of inert substances. They must be studied as nearly as possible in the condition in which they exist in the body; which is necessarily the condition in which they are capable of manifesting their characteristic vital phenomena."

"Studied, as they generally have been, from a purely chemical point of view, they are regarded by many as solid substances in solution in the fluids, in a condition approximating to this in the semi-solids, and of course as solid in the solids, like the bones and teeth. This view is erroneous, as we shall see that some are naturally fluid, some are semi-solid, and some are solid. In this condition they have been found to consist of carbon, hydrogen, oxygen, nitrogen, with sometimes a little sulphur and phosphorus. The colouring matters contain in addition a small proportion of iron. By ultimate analysis they have been found to be of *indefinite chemical composition*,[1] which, indeed, we would be led to expect from the state of continual change in which they exist in the body. By the method employed in arriving at their ultimate composition, even before analysis, they are completely destroyed as organic principles by desiccation, and rendered incapable of exhibiting any of their characteristic properties. The composition of their dry residue only is thus given, while in reality they all contain more or less water, which enters into their composition, and deprived of which they cannot be called organic substances. The proportion of water is to some extent variable, but confined within tolerably narrow limits.[2]

"The organic principles never exist alone, but always in combination with inorganic substances, which, though perhaps not absolutely necessary to the properties by which they are recognized out of the body, are essential in the performance of their vital functions in the economy. Under these circumstances the organic and inorganic principles are so closely united, that the latter may be said to acquire, by virtue of this union, vital properties. Though unaltered, the inorganic are discharged with the worn-out organic substances, and, combined with fresh organic matter, are deposited in the tissues in the process of regeneration."

"A review of the individual properties of the organic nitrogenized principles shows great differences in their physiological, and very slight differences in their purely chemical characters. It is a fact too apparent to require argument, that their chemical history is of little importance compared to a study of their vital properties. In fact researches into their ultimate composition, with the exception that they have shown them all to contain nitrogen, are almost without value. Without exception they are all in a state of intimate molecular union with inorganic matter, and in this union inorganic compounds become endowed with life; that is, the inorganic parts of the body, as the calcareous elements of bone, taken up by the blood with the worn-out organic principles and undergoing constant waste, are capable of self-regeneration.

"*The vitality thus imparted to inorganic matters, and the fact that neither the organic nor inorganic elements are alone capable of engaging in the phenomena of life, cannot be too fully insisted upon.* Both are taken into the body as food, are digested, assimilated, and finally discharged, always in combination; the organic principles changed, and converted into excrementitious substances, and the inorganic principles unchanged."

The first three and the thirteenth chapters of the volume under consideration are devoted to an account of the physical characters and composition of the blood, and the phenomena of coagulation and hæmatosis.

[1] Robin and Verdeil, *op. cit.*, tome iii. p. 147.

[2] For a further discussion of this important subject, see an article by the author in the *American Journal of the Medical Sciences*, October, 1863, "On the Organic Nitrogenized Principles of the Body, with a New Method for their Estimation in the Blood."

The blood is the most abundant, most complex, and most highly developed or elaborated of all the fluids of the body. Its ruddy waves carry to every molecule of the tissues the material for their renewal, and the stimulus which keeps them alive and strong. Into it are constantly conveyed the essential elements of life—air, food, and water. Through the cells of the lungs the blood obtains air; through the bloodvessels and lacteals of the alimentary canal water passes, and food, in the triple form of albuminose, glucose, and oily emulsion. Air, food, and water, thus supplied to the blood, undergo a wonderful process of transformation, and are finally distributed to every part of the body. But the blood is also the grand reservoir into which are poured all the effete or worn-out matters discharged from the various tissues. Not only do the tissues find in the blood the requisite quantity of oxygen and saline matters, and the proper supply of histogenetic and calorifacient elements necessary to healthy nutrition, but they discharge into the blood the various products of their decomposition. In all probability this influx of effete matter into the blood occurs simultaneously with the efflux of nutritious material from the blood to the tissues. The process is probably one of endosmosis and exosmosis. This double osmotic process, in conjunction with the assimilation of nutritious materials by the tissues constitutes the great process of nutrition. In the blood, then, are constantly mingled together the materials for the renovation of the tissues, and the results of their decay—the elements of life and the products of death. In the healthy condition of the blood, the former set of these components exist in much larger quantity than the latter. In certain diseased conditions the latter accumulate with the effect of destroying the health, the comfort, and frequently the life of the individual. While the chlorides, phosphates, carbonates, and sulphates of the blood are appropriated, for the most part, under their own form, and in proportions differing in different parts of the body; and while the albuminous ingredients of the blood are also absorbed by the tissues, and at the same time transformed by catalysis into musculine, osteine, cartilageine, and other organic bases—the effete or excrementitious matters, such as carbonic acid, cholesterine, urea, creatine, creatinine, the urates of soda, potassa, and ammonia, &c., are conveyed to certain organs and by them separated from the blood, and cast out of the body. In this manner is the blood depurated or deprived of impure matters, which if allowed to accumulate beyond a certain amount would sooner or later produce a fatal result. The lungs and the skin separate carbonic acid, cholesterine escapes through the liver, and the remainder of the proximate principles above enumerated are discharged through the kidneys. The lungs, the skin, the liver, and *par excellence* the kidneys may justly be regarded, therefore, as the excretory appendages of the blood.

Furthermore, the sanguineous fluid not only ministers to these acts of nutrition and excretion, but also supplies to certain glandular organs the materials out of which are formed the various secretions, such as the tears, the perspiration, saliva, gastric juice, &c. The water, and for the most part the saline matters of these fluids, exist already in the blood; the pepsine, ptyaline, and other organic bases of these secretions are elaborated by gland-cells out of substances supplied by the circulating fluid.

The blood binds together and harmonizes all the organic functions. It is the corner-stone of organic life. The digestive and absorptive apparatuses prepare food and introduce it into the blood; the respiratory organs supply it with air and remove its carbonic acid; the circulatory apparatus

conveys it to all parts of the body; in the capillary vessels of that apparatus the functions of nutrition, secretion, and excretion take place, and in these the blood plays an important part; the secretory and excretory organs provide for the depuration of the blood—they preserve it in a pure state. Moreover, in an indirect way, the tissues in relation to the blood play a similar part, for by absorbing each their appropriate supplies, they preserve the blood from the injurious consequences of an excess of nutritious material. The blood, as the carrier of oxygen, sets in motion those changes which result in the evolution of caloric in the economy; and by means of this very same oxygen the blood influences the nervous and muscular systems.

The sanguineous fluid is hourly and momently impressed by the thermometric, hygrometric, barometric, and electric conditions of the atmosphere. The influence thus exerted by these climatic elements, which are, in truth, the external condition of vitality, is imparted by the blood to the tissues. Viewed in this manner the vital fluid is seen to be the great organic link connecting together external nature and the internal man. It is evident, therefore, that an intimate acquaintance with the physiology of the blood is the key to the entire series of the phenomena of life. "For the blood," as Lehmann has philosophically observed, "is the centre round which the general metamorphosis of animal matter revolves, and in which it is perfected."

Magendie, recognizing the extreme importance of an accurate knowledge of the vital fluid, devotes an entire volume of his *Phenomènes physiques de la Vie* to its experimental study; and his successor in the "College of France," the eminent Claude Bernard, has, in like manner, dwelt largely upon the same subject in his *Leçons sur les Liquides de l'Organisme.* Nearly the whole of the first volume of Milne Edwards' admirable *Leçons sur la Physiologie et l'Anatomie comparée de l'Homme et des Animaux* is occupied with an exhaustive and most instructive account of the anatomy, chemistry, and physiology of the blood. Dr. Flint, following the example of this distinguished author, also precedes his exposition of the functions with a description of the blood. This description, however, instead of being as thorough as the importance of the subject demands, is, in many respects, we regret to say, meagre and unsatisfactory. The sections relating to the physical characters of the blood, its transfusion and quantity, are exceedingly brief. The opacity, odour, temperature, and specific gravity of the blood are dispatched in a page and a half. The anatomical elements are considered at greater length, and in a more satisfactory manner.

It is well known that physiologists are divided in their opinions concerning the structure of the red corpuscles. As long ago as 1685, Bidloo, in his *Anatomia Humani Corporis*, maintained that these corpuscles were vesicular bodies. Weisse adopted this opinion a century later. Hewson, Wells, Prevost, and Dumas, and, among other more recent writers, Milne Edwards, have also advocated this doctrine. On the other hand, Blumenbach, in his *Elements of Physiology*, declared that he was able to detect in these globules nothing more than bodies of a simple, spherical appearance, and a solid, gelatinous consistence. Blainville, Donné, and Valentin coincide in this view. Dr. Dalton, in his *Treatise on Human Physiology*, also maintains that the red globules are not cells, but "consist of a mass of organized animal substance, perfectly or nearly homogeneous in appearance, and of the same colour, consistency, and composition throughout."

Dr. Flint adopts the same opinion, as will be seen from the following quotation:—

"The structure of the blood-corpuscles is very simple. They are perfectly homogeneous, presenting, in their normal condition, no nuclei or granules, and are not provided with an investing membrane. A great deal has been said by anatomists concerning this latter point, and many are of the opinion that they are cellular in their structure, being composed of a membrane, with viscid, semi-fluid contents. Without going fully into the discussion of this point, it may be stated that few have assumed actually to demonstrate this membrane; but they have, for the most part, inferred its existence from the fact of the swelling, and as they term it, bursting on the addition of water; and particularly, as it seems to me, to make the blood-corpuscles obey the theoretical laws of cell-development and nutrition laid down by Schwann. Their great elasticity, the persistence with which they preserve their bi-concave form, and their general appearance, would rather favour the idea that they are homogeneous bodies of a definite shape, than that they have a cell-wall with semi-fluid contents; especially as the existence of a membrane has been inferred rather than demonstrated."

With regard to the development of the blood-corpuscles, Dr. Flint's views again accord with those of Dr. Dalton. He rejects the theory of the transformation of the white corpuscles or leucocytes into red globules.

"In many works on physiology and microscopic anatomy," he writes, "we find accounts of the development of the red corpuscles from the colourless corpuscles, or leucocytes, which are supposed to become disintegrated, their particles becoming developed into red corpuscles; but there seems to be no sufficient evidence that such a process takes place. The red corpuscles appear before the leucocytes are formed;[1] and it is only the fact that the two varieties coexist in the bloodvessels which has given rise to such a theory. It is most reasonable to consider that the red corpuscles are formed by a true *genesis* in the sanguineous blastema. We can offer no satisfactory explanation of the process by which the tissues are formed from their blastema, nor can we explain the way in which the blood-corpuscles, which are true anatomical elements, take their origin. There is furthermore no sufficient evidence that any particular organ or organs have the function of producing the blood-corpuscles. Hewson supposed that they were formed in the spleen. Kölliker is of the opinion that they are destroyed in the spleen. It is regarded by some as a necessity that there should be an organ for the destruction of the corpuscles, and one for their formation. Regarding them, as we certainly must, as organized bodies which are essential anatomical elements of the blood, it is difficult to imagine what reasons, based on their function, should lead physiologists to seek so persistently after an organ for their destruction. The hypothesis that they are used in the formation of pigment seems hardly sufficient to account for this.

"In the present state of our science, the following seem to be the most rational views with regard to the development and nutrition of the blood-corpuscles:—

"1. At their first appearance in the ovum, they are formed by no special organs, for no special organs exist at that time, but appear by genesis in the sanguineous blastema.

"2. When fully formed, they are regularly organized anatomical elements, subject to the same laws of gradual molecular waste and repair as any of the tissues.

"3. They are generated *de novo* in the adult, when diminished in quantity by hemorrhage or otherwise, and under these circumstances they are probably formed in the liquor sanguinis by the same process by which they take their origin in the ovum."

The chapter on the composition of the blood is chiefly interesting on account of the method proposed by our author for the quantitative analysis of the blood. Against the processes employed by Provost and Dumas,

[1] Longet, Traité de Physiologie, tome i. p. 715.

Andral and Gavarret, Becquerel and Rodier, and others, he urges the objection that their estimates give us only the dry residue of the organic principles; whereas to form an idea of their actual proportion, we should estimate them, if possible, with their water of composition, and united with the inorganic salts, which cannot be separated from them without incineration and consequent destruction. With this end in view, he suggests the following analytical process, as at once easy of application and sufficiently accurate in its results:—

"The blood to be analyzed is taken from the arm, and received into two care fully weighed vessels. The quantity in each vessel may be from two to four ounces. One of the specimens is immediately whipped with a small bundle of broom-corn, previously moistened and weighed, so as to collect the fibrin; and after the fibrin is completely coagulated, the whole is carefully weighed, deducting the weights of the vessel and broom-corn, which gives the weight of the specimen of the blood used. The other specimen is set aside to coagulate.

"The first specimen is used in the estimation of the fibrin and corpuscles; the second is set aside to coagulate, and is used to estimate the albumen. It is important to cover the vessel as soon as the blood is drawn, for, as has been demonstrated by Becquerel and Rodier, blood exposed to the air loses weight rapidly by evaporation.[1]

"We now pass the first specimen of blood through a fine sieve to collect any fibrin that may not have become attached to the whisp, strip the fibrin from the whisp, and wash it under a stream of water. This may be done very rapidly if we cause the water to flow through a small strainer, by which it is broken up into a number of little streams, and knead the fibrin with the fingers, doing this over a sieve so as to catch any particles that may become detached. In this way it may be freed from the corpuscles in five or ten minutes. The fibrin is then freed from most of the adherent moisture by bibulous paper, and weighed as soon as possible. By the following formula we estimate the proportion per 1,000 parts of blood:—

"Weight of blood used : Weight of fibrin : : 1,000 : Fibrin per 1,000.

"The next step is to estimate the corpuscles. For this purpose a portion of the defibrinated blood, which is carefully weighed, is mixed with twice its volume of a saturated solution of sulphate of soda, and thrown upon a filter which has been carefully weighed and moistened with distilled water, and also, just before receiving the mixture of blood and sulphate of soda, with the saline solution. The fluid which passes through should be about the colour of the serum; if a few corpuscles pass at first, the liquid should be poured back until it becomes clear. The funnel is then covered, and the fluid allowed to separate, the blood-corpuscles being retained on the filter. The filter and funnel are then plunged several times into a vessel of boiling water, by which all the sulphate of soda which remains is washed out, and the corpuscles are coagulated without changing in weight. The funnel should be again covered and the water allowed to drip from the filter, after which it is weighed, deducting the weight of the moist filter previously obtained, which gives us the weight of the corpuscles. We obtain the proportion of corpuscles to 1,000 parts of blood by the following formula:—

"Defibrinated blood used : Corpuscles : : Defibrinated blood per 1,000 : Corpuscles per 1,000.

"The next step is to estimate the quantity of albumen in the serum, and thence its proportion in the blood. For this purpose we first ascertain the quantity of serum in 1,000 parts of blood, which is done by subtracting the sum of the fibrin and corpuscles per 1,000 from 1,000. Having done this, and waited ten or twelve hours for specimen No. 2 to separate completely into clot and serum, we take a small quantity of the serum, about half an ounce, weigh it carefully, and add suddenly twice its volume of absolute alcohol. The albumen

[1] See an article by the author, "On the Organic Nitrogenized Principles of the Body, with a New Method for their Estimation in the Blood, *American Journal of the Medical Sciences*, October, 1863.

will be thrown down in a grumous mass, and the whole is thrown upon a filter, which has been previously moistened with alcohol and weighed. The funnel is immediately covered, and the fluid separates from the albumen very rapidly. We ascertain that no fluid albumen passes through the filter by testing the fluid with nitric acid. After the filter has ceased to drip, it is weighed, and the weight of the albumen ascertained by deducting the weight of the filter. The proportion of albumen to 1,000 parts of blood is obtained by the following formula:—

"Serum used : Albumen : : Serum per 1,000 : Albumen per 1,000."

In the next chapter the phenomena, uses, and cause of coagulation are briefly discussed. The well-known observations and experiments of Richardson are judiciously commented upon and criticized. Dr. Flint is evidently disposed to adopt the general conclusion to which Richardson has arrived. He does not, however, wholly commit himself to this theory, but cautiously remarks that if we apply to the coagulation of the blood in the body, the facts which are proven with regard to external coagulation, we may conclude that "at least in the human subject and in mammals, it seems demonstrated to be due to the evolution of ammonia." And again he says: "Ammonia, which is contained in the blood, has the property of maintaining its fluidity; but on exposure to air, or in rupture of vessels, we have an escape of ammonia, and the fibrin by its coagulation reduces the whole mass of blood to a semi-solid consistence."

This chapter terminates with an interesting summary of the properties and functions of the blood, to which the student may refer with advantage.

The next six chapters are occupied with an account of the circulation. In the first of these are considered in some detail the movements and sounds of the heart. Dr. Flint's description of the action of the auricles and ventricles, the locomotion, twisting and hardening of the heart during the systole differs in nowise from the account of these phenomena generally given by physiologists. As to the mooted question whether the ventricles elongate or shorten during their contraction, he thus writes:—

"All who have studied the heart in action have observed changes in length, duration, contraction, and relaxation; but the contemporaries of Harvey were divided as to the periods in the heart's action which are attended with elongation and shortening. Harvey himself is not absolutely definite on this point. In one passage he says, in describing the systole, 'that it is everywhere contracted, but especially towards the sides, so that it looks narrower, *relatively longer*, more drawn together.'[1] In his description of the case of the Viscount Montgomery, who suffered from *ectopia cordis*, he states that during the systole, the heart 'emerged and protruded.'[2] Vesalius, Riolan, Fontana, and some others, contended for elongation during the systole; but Haller, Steno, Lancisi, and Bassuel contended that it shortened. The view generally entertained at the present day is that the heart becomes shorter during its systole; but there are some eminent authorities who hold an opposite opinion. Among the latter may be mentioned Drs. Pennock and Moore; who made a great number of experiments on the action of the heart in sheep and young calves. These experiments were made in Philadelphia in 1839, and it was apparently demonstrated that the heart elongated to such a marked degree, that the distance could be measured with a shoemaker's rule. In one experiment (a ewe one year old), the elongation was a quarter of an inch.[3] Of all the writers of systematic works on physiology, Prof Dalton is the only one, as far as we know, who accepts this

[1] Harvey's Works, published by the Sydenham Society, p. 21.

[2] Ibid., p. 384.

[3] Hope, "On the Heart." American edition by Pennock, Philadelphia, 1846, p. 59.

view.[1] The experiments of this observer apparently confirm those of Drs. Pennock and Moore. Some experiments made by the author a few years ago, published in the *American Journal of the Medical Sciences*, October, 1861, had apparently the same result. There is no doubt that the point of the heart is protruded during the ventricular systole, as the experiments referred to conclusively prove; but the author was led by the perusal of recent experiments by Chauveau and Faivre, to recognize the fact that this protrusion is probably due to other causes than the elongation of the ventricles, and that *during the systole the ventricles are shortened.* The experiment cited by these eminent physiologists is very simple and conclusive. It is made by suddenly cutting the heart out of a warm-blooded animal, and watching the phenomena which accompany the few regular contractions which follow. They found that the ventricles invariably shortened during the systole. This could easily be appreciated by the eye, but more readily if the point of the organ were brought just in contact with a plane surface at right angles, when at each contraction it is unmistakably observed to recede.[2] This experiment we have lately repeated before the class of the Bellevue Hospital Medical College, and have satisfied ourselves of its accuracy. A large Newfoundland pup, about nine months old, was poisoned with woorara, artificial respiration was kept up, and the heart exposed. After showing the protrusion of the point and the apparent elongation while in the chest, the organ was rapidly removed, placed upon the table, and confined by two long needles passed through the base, pinning it to the wood. It contracted for one or two minutes; and at each systole, the ventricles were manifestly shortened. The point was then placed against an upright, and it receded with each systole about an eighth of an inch. This phenomenon was apparent to all present.

"In another experiment, performed a few weeks later, the heart, which had been exposed in the same way, was examined *in situ* by pinning it with two needles to a thin board passed under the organ. The presence of these needles did not seem to interfere with the heart's action, and at each ventricular systole the point evidently approached the base. To render this absolutely certain, a knife was fixed in the wood at right angles to and touching the point during the diastole, and a small silver tube was introduced through the walls into the left ventricle. At each contraction a jet of blood spirted out through the tube, and the point of the heart receded from the knife about an eighth of an inch. The animal experimented upon was a dog a little above the medium size.

"These simple experiments demonstrate that, in the dog at least, the ventricles shorten during their systole. The arrangement of the muscular fibres is too nearly identical in the heart of the warm-blooded animals to leave room for doubt that it also shortens in the human subject.

"The error which has arisen in this respect, and which obtained in our former experiments, is due to the locomotion and protrusion of the entire organ, so as to make the point strike against the chest. A little reflection indicates the mechanism of this phenomenon. During the intervals of contraction, the great vessels, particularly the aorta and pulmonary artery, which attach the base of the heart to the posterior wall of the thorax, are filled, but not distended, with

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[1] Dalton, "A Treatise on Human Physiology," Philadelphia, 1864, third edition, pp. 275, 276. The heart of the eel is said by Haller to elongate during its ventricular systole, though this is denied by Fontana (*Mémoires de Haller*, Lausanne, 1760, tome iii. p. 224); but in experimenting on the organ after excision, the position in which it is held is important. If, for example, we take the heart of a turtle between the thumb and finger and hold it with the point upwards, the ventricle is so thin and flabby that it will become flattened during the intervals of contraction, and the point will be considerably elevated at each systole; but if we reverse the position and allow the point to hang down, it will be drawn up and the ventricle will shorten with the systole.

[2] Chauveau et Faivre, *op. cit.*, p. 14. These observers show the shortening of the heart during its systole by holding it by the great vessels with the point down. It is more free from sources of error to observe the phenomena as the heart lies on a flat surface.

blood; at each systole, however, these vessels are distended to their utmost capacity; their elastic coats permit of considerable enlargement, as can be seen in the living animal, and this enlargement, taking place in every direction, pushes the whole organ forward. We have also considerable locomotion of the heart from recoil. It is for this reason that, observing the heart *in situ*, the ventricles seem to elongate, and an instrument applied to it apparently indicates removal of the apex from the base. It is only when we examine the heart firmly fixed, or contracting after it is removed from the body, that we can appreciate the actual changes which occur in the length of the ventricles."[1]

In this chapter the interesting observations of MM. Chauveau and Faivre, and those of M. Marey upon the succession of the movements of the heart are detailed, and from them deduced the general conclusion that the auricular systole is sudden, more feeble than the ventricular contraction, occupies two-tenths of a second, and is immediately followed by relaxation; that the ventricular systole is powerful, follows immediately the auricular contraction, is absolutely synchronous with the impulse of the heart, and occupies about four-tenths of a second; and that the diastole occupies four-tenths of a second. In relation to the cardiac sounds, Dr. Flint says that the first sound occupies the period of the ventricular systole, or four-tenths of the heart's action, the second sound about three-tenths, and the repose three-tenths.

Chapter V. treats of the frequency of the heart's action, the various circumstances which influence it, the cause of the rhythmical contractions of the heart, the effects of the division and galvanization of the pneumogastric nerves, and the causes which arrest the action of the heart. In this chapter Dr. Flint endeavours to show that the pneumogastric nerves perform the important function of regulating the force and frequency of the heart's pulsations.

The circulation of the blood in the arteries, capillaries, and veins is fully and ably considered in the three succeeding chapters. In this portion of the work the reader will find an account of the various instruments invented by different observers for the purpose of registering the pulse, and determining the degree of pressure and the rapidity of movement of the blood in the vessels—such as the sphygmographs of Vierordt and Marey, the hæmodynamometer of Poiseuille, the cardiometer of Magendie, the differential hæmodynamometer of Bernard, the compensating apparatus of Marey, the kymographion of Ludwig, &c. By means of an instrument devised by M. Chauveau, of the Veterinary School of Lyons, for ascertaining the rapidity of the current of blood, it has been found that in the carotid artery of the horse three currents, having different degrees of rapidity, may be distinguished:—

"1. At each ventricular systole, we have, as the average experiments of Chauveau, the blood moving in the carotids at the rate of *twenty* $\frac{1}{10}$ *inches per second*. After this the rapidity quickly diminishes, the needle returning quite or nearly to zero, which would indicate complete arrest.

"2. Immediately succeeding the ventricular systole, we have a second impulse given to the blood, which is synchronous with the closure of the semilunar valves, the blood moving at the rate of *eight* $\frac{6}{10}$ *inches per second*. This Chauveau calls the *dicrotic impulse*.

[1] The observations of Fontana on the shortening of the heart are very conclusive. He constructed a little instrument consisting of two vertical rules, sliding on a horizontal bar like a shoemaker's measure, one of which was applied to the base, and the other just grazed the apex. He estimated the shortening of the heart in a lamb at about two Paris lines (*Mém. de Haller*, tome iii. p. 225).

"3. After the dicrotic impulse, the rapidity of the current gradually diminishes, until, just before the systole of the heart, it becomes almost nil. The average rate after the dicrotic impulse is *five* $\frac{9}{10}$ *inches per second.*

"These experiments give us, for the first time, correct notions of the rapidity and variations of the flow of blood in the larger vessels; and it is seen that they correspond in a remarkable degree with the experiments of Marey on the form of the pulse. Marey showed that there is a marked oscillation of the blood in the vessels, due to a reaction of their elastic walls, following the first violent distension by the heart; that at the time of closure of the semilunar valves, the arteries experience a second, or dicrotic distension, much less than the first; and following this, there is a gradual decline in the distension until the minimum is reached. Chauveau shows by experiment with his instrument, that corresponding to the first dilatation of the vessels, the blood moves with immense rapidity; following this, the current suddenly becomes nearly arrested; this is followed by a second acceleration in the current, less than the first; and following this we have a gradual decline in the rapidity to the time of the next pulsation."

With regard to the capillary circulation Dr. Flint denies the existence of the "capillary force" so strongly and we may say so philosophically supported by Prof Draper, of New York, and other physiologists. He maintains that the action of the heart and the contractions and relaxations of the arterioles are sufficient to force the blood through the capillaries and to produce all the variations observed therein. He asserts very emphatically that microscopic observations and experiments on the arteries and veins, thus far, show that no other force is concerned in carrying the blood from the arteries into the venous radicles.

The last five chapters of Dr. Flint's work treat of the movements of respiration, the changes which the air and blood undergo in the lungs, and the relations of respiration to nutrition.

This brief account of its contents, together with the quotations which we have made from its pages, will suffice to convey to our readers some idea of the general character of the volume under notice. It is well and carefully written, and in language at once simple and perspicuous. Its various divisions are systematically arranged, and the facts and theories advanced are for the most part well digested. It is beautifully printed upon excellent tinted paper, and is, in all respects, a handsome and attractive book. J. A. M.

ART. XXIII.—*A Practical Treatise on Urinary and Renal Diseases, Including Urinary Deposits; Illustrated by Numerous Cases and Engravings.* By WILLIAM ROBERTS, M. D., Fellow of the Royal College of Physicians, London; Physician to the Manchester Royal Infirmary; Lecturer on Medicine in the Manchester School of Medicine. Small 8vo. pp. 523. London, 1865.

The same. 8vo. pp. 516. Philadelphia: Henry C. Lea, 1866.

NEXT to the diseases affecting the lungs and heart, renal and urinary diseases exemplify most strikingly the progress made in special pathology within the memory of the older members of the medical profession. Dating from the great discoveries of Bright and the writings of Prout, our knowledge of morbid conditions seated in the kidney, together with their patho-

logical relations, and the diagnostic import of changes in the urine, has been progressively increasing through the researches of the still later anatomical and clinical observers. At the present moment, obscure as are many points connected with this branch of special pathology, and much as there is now remaining to be elucidated by further researches, the practitioner of medicine fails egregiously in doing justice to his profession and his patients if he be not cognizant of the facts already acquired, and if he neglect to interrogate the renal organs in a large proportion of the cases of disease which he is called upon to investigate. To prepare and aid the physician in discharging his duty in this respect, a treatise setting forth, concisely but comprehensively, existing knowledge and its practical applications has been, for some time, a desideratum. Dr. Roberts has undertaken to meet this want, and, after a careful examination of his treatise, we are prepared to say that, in our opinion, it is well adapted to fulfil the object for which it was designed.

The first part of the work is occupied with the physical and chemical properties of the urine in health and disease, including urinary deposits. This part embraces nearly one-third of the volume. The methods of examining the urine for known morbid changes are clearly stated, and the different varieties of renal casts, epithelium, confervoid vegetations and crystals are represented by wood-cut engravings. Under the head of urea the author has introduced the table drawn up by Professor Haughton indicating the quantity of urea excreted per day, provided the number of ounces of urine voided in the twenty-four hours and the specific gravity be ascertained. The importance of determining the amount of urea excreted, with reference to the immediate danger of uræmia, does not appear to be sufficiently appreciated by many practitioners. An examination of the urine with reference to albumen and renal casts, is often considered sufficient. But the chief source of immediate danger, in cases of disease of the kidneys, is from the effects of the accumulation of urea in the blood, and the danger from these effects is to be estimated from the deficiency of urea in the urine. Urea may not be notably deficient in the urine notwithstanding the existence of albumen in abundance and the presence of renal casts; and *per contra*, urea may be notably deficient when neither albumen nor casts exist in the urine. The quantitative analysis of the urine by either Liebig's or Davy's volumetric method is attended with sufficient difficulty to render these methods often unavailable in practice, and hence, the practitioner will find Prof. Haughton's table highly useful.

In these remarks it is assumed that urea is formed either in the tissues or the blood, and merely separated by the kidneys. Dr. Roberts, however, cites experiments made by Oppler and Zalesky as tending to show that the doctrine generally held with respect to the urea and the kidneys is incorrect, and that this excrementitious principle is a product of renal secretion. The experiments consist of tying the ureters and comparing the amount of urea in the blood after this operation with the amount in animals from whom the kidneys have been removed. Our readers will doubtless agree with us in saying that it will require numerous well-conducted and well-attested experiments to overturn the current doctrine with respect to this point. The author, moreover, affirms with respect to the mooted question as to urea being poisonous *per se* or only after conversion into the carbonate of ammonia, that recent experiments seem to have given the *coup de grâce* to both theories, and to indicate that uræmia "depends mainly and essentially on the accumulation in the blood and tissues of those primary pro-

ducts of tissue-metamorphosis (creatine, creatinine, and other extractives) which, in a later stage of histolysis, are converted into urea and uric acid."

The fallacies incident to examinations for albumen are distinctly explained in the work under review. We quote the author's mode of testing with nitric acid:—

"Nitric acid is an extremely delicate test for albumen. The best manner of applying it is to fill a test-tube to the depth of about an inch; then inclining the tube, to pour in strong nitric acid in such a manner that it may trickle down along the sides of the tube to the bottom, and pour a stratum some quarter of an inch thick below the urine. Added in this manner there is scarcely any mingling of the two fluids, and if albumen be present, three strata or layers will be obtained; one, perfectly colourless, of nitric acid at the bottom; immediately above this an opalescent zone of coagulated albumen, and on top the unaltered urine. If there be only a trace of albumen, two or three minutes elapse before the opalescent zone becomes visible. There is no method equal to this for detecting minute quantities of albumen. The reaction of the urine does not interfere with its operation. Only one caution is necessary. In concentrated urines, and especially febrile urines, the addition of the acid is apt to precipitate the amorphous urates, and thus to occasion a turbidity which might be mistaken for albumen. The two conditions, however, are easily distinguished by observing the level at which the cloudiness begins, and the direction in which it spreads. Albumen begins to coagulate immediately above the stratum of acid, and the turbidity spreads upwards; but the urates first appear at or near the surface of the urine, and the opacity spreads downwards. Heat also readily resolves the doubt; for the urates speedily disappear when the urine is warmed, but turbidity from albumen is not affected by heat."

As regards the pathological significance of albuminuria, the author points out the important distinction to be made between the permanent and temporary presence of albumen in the urine. He quotes the tables prepared by Dr. Parkes, showing, of cases of different diseases, the proportion in which temporary and permanent albuminuria were found to exist. The reader will find numerous observations relative to this point in the recent work by Abeille, of Paris, a work to which the author subsequently refers.

Part second of the volume is devoted to "Urinary Diseases, or Diseases of which the Chief Characteristic is an Alteration of the Urine." Agreeably to common usage, the author includes among these diseases diabetes mellitus, or saccharine diabetes. We are glad to see, under this head, a reference to the "milder types of diabetes." The author thus distinguishes these types: "From ordinary or classical diabetes, these milder types are distinguished by all or most of the following signs: absence of a fixed tendency to a fatal termination; absence, or only a moderate degree of thirst, voracity and emaciation; slight or temporary increase in the quantity of urine; transitory duration; amenability to treatment; slight, moderate, or intermittent glycosuria." It is highly important for the practitioner to bear in mind the occasional occurrence of a mild type of the disease in order that he may not entertain too unfavourable a prognosis in all cases in which sugar is found in the urine. It has occurred to the writer of this article to meet with a case during the past winter, in which all the symptomatic phenomena of diabetes mellitus existed for several weeks, and at length disappeared, the glycosuria included.

The author considers under distinct heads active and passive congestion of the kidneys. These conditions he treats of as separate from those embraced under the name Bright's disease. Bright's disease he considers as acute and chronic. Acute Bright's disease with this author, is, in other words, acute diffuse nephritis; it is the acute desquamative nephritis of

Johnson, the hyperæmic stage of Bright's disease according to Frerichs, the acute albuminuria of some writers, and the inflammatory dropsy of authors who wrote prior to the discovery by Bright. The distinctive features of this form of disease are sufficiently ascertained, but the pathological character and seat are not as yet settled to the satisfaction of all minds, and hence, provisionally the name acute Bright's disease should, perhaps, be retained. Under the head, chronic Bright's disease, the author embraces the several varieties of degenerative renal disease. He considers these varieties as resolvable into three types, viz., the smooth, white kidney, which is generally enlarged; the red, granular kidney, which is generally contracted, and the lardaceous or waxy kidney. He does not recognize as a distinct variety the fatty kidney, holding that "the presence of fat in the renal substance and in the epithelium of the tubes is not special to any one type of renal degeneration, but is found associated with anatomical changes of the most varied kinds, and, therefore, it has no claim to a separate consideration."

Dr. Roberts regards the different types of chronic degeneration of the kidneys as representing distinct affections, not as the successive stages of one disease. In this he is in accordance with most pathologists other than those of Germany. That his view is correct can, we believe, be logically proven; yet, it must be confessed that, clinically, it is not always easy to discriminate the affections from each other; nor is it certain how many distinct affections are embraced under the name chronic Bright's disease. We have doubts as to the propriety of eliminating the fatty kidney from the series of types. The differential phenomena pertaining to the clinical history of the different forms of chronic Bright's disease, however, have been to a certain extent ascertained. The author gives a good synopsis of the symptoms which distinguish the contracted, granular kidney, from the large white kidney; and he introduces a tabular view from Dickinson, of the relative frequency of the various secondary affections in these two types. Œdema, peritonitis, and convulsion are shown by this table to be much more frequent with the smooth kidney; whereas, heart disease, atheroma, and coma are much more frequent with the granular kidney.

Aside from the affections already named, Dr. Roberts treats, in the second part of his work, of gravel and calculus, abscess of the kidney, renal embolism, pyelitis and pyronephrosis, concretions in the kidneys, hydronephrosis, cystic degeneration, cancer, benign growths, tubercle and entozoa, the volume ending with an account of anomalies of position, form and number of the kidneys.

In concluding this notice we would again express the opinion that the author has succeeded in preparing a work which presents, comprehensively and concisely, the existing state of knowledge respecting urinary and renal diseases, regarded especially in its practical aspects; and we commend the work most cordially as admirably adapted to supply in medical literature a treatise which every intelligent physician must have felt to be needed.

A. F.

BIBLIOGRAPHICAL NOTICES.

ART. XXIV.—*Cholera, its Pathology and Treatment.*

1. *Asiatic Cholera.* By Y. A. BURRALL, M. D. 12mo. pp. 155. New York, 1866.
2. *Lectures on Cholera.* By A. CLARK, M. D., Professor of Pathology and Practical Medicine, College of Physicians and Surgeons, N. Y. From the Medical Record, 1866.
3. *A Communication from the City Physician on Asiatic Cholera. Is it a Contagious Disease?* 8vo. pp. 41. Boston, 1866.
4. *Report on Sundry Documents relating to Cholera, Transmitted by the Governor of Rhode Island to the Board of Health of the City of Providence.* By EDWIN M. SNOW, M. D., Superintendent of Health. 8vo. pp. 13. Providence, 1865.
5. *Measures proposed for the Prevention of Asiatic Cholera in the City of Providence; a Report to the Board of Aldermen.* By EDWIN M. SNOW, M. D., Superintendent of Health. 8vo. pp. 15. Providence, 1865.
6. *Tracts for the People.* By EDWIN M. SNOW, M. D., Superintendent of Health. Nos. 1, 2, 3, 4; each four pages. Providence, R. I., 1866.
7. *Notes on the Pathology and Treatment of Cholera.* By GEORGE JOHNSON, M. D., F. R. C. P., Professor of Medicine in King's College, etc. The Med. News, 1866, from British Medical Journal.
8. *Diarrhœa and Cholera; their Origin, Proximate Cause, and Cure, through the Agency of the Nervous System, by means of Ice.* By JOHN CHAPMAN, M. D., M.R.C.P., M.R.C.S. From the London Medical Times and Gazette. 12mo. pp. 57. Philadelphia, 1866.

THE appearance again of cholera as an epidemic, spreading from India to Europe, and thence to this continent, along nearly the same route and within almost the same limits pursued and occupied by it during its former visitations, has aroused the members of the medical profession everywhere to a feeling of the importance of a careful study of the vast body of facts bearing upon the nature, the causation, and mode of propagation of the disease, as well as upon the means by which its march in any particular direction may be arrested; or, at least, its introduction and spread among those communities which lie along its track may be guarded against. As a necessary consequence of this desire, evinced on every hand by physicians, to acquire, in advance of the occurrence of the cholera in their neighbourhoods, a knowledge of its etiology, pathology, and prophylaxis, and of the treatment which has been found to be the most successful in the amelioration of its more dangerous symptoms, or in their entire arrest in such as shall be so unfortunate as to become its subjects, a number of publications, of more or less pretension, have recently made their appearance. Some of these are addressed to the community at large, pointing out, in popular language, the proper sanitary measures, public, domestic, and personal, to be pursued for the purpose of removing, as far as possible, those conditions which have been found to attract, as it were, the specific poison productive of cholera, and when it is thus attracted, to favour its agency in the production and spread of the disease. Others of these publications are intended for the use of the physician alone; the major portion furnishing him with a summary of the more prominent of the facts already known in respect to the pathology and therapeutics of cholera; while a few present new views of the nature of the disease or suggest new plans for its treatment.

The titles of such of these publications as have fallen into our hands we have placed at the head of this article, proposing to give a concise sketch of the

views they set forth as to the nature of cholera, and of the means adapted to its prevention and cure.

In respect to the causation of the disease it is now, we believe, generally conceded that it is of specific origin. That locations where there is a wet soil, high atmospheric temperature, foul water, and unfavourable hygienic conditions generally, afford a favourable nidus for the generation of the cause of the disease. Such conditions are to be met with at the Delta of the Ganges, and there we find the cholera to be indigenous, the disease prevailing more or less extensively and with more or less malignancy according to the increased or diminished intensity of the local conditions enumerated. From its cradle, such as we have thus described it, the choleraic poison is liable to spread, as from a centre, in every direction; and wherever it finds a condition of things similar to those amid which it sprung into being, it exhibits its morbific influence, while this is but lightly, if at all, felt in localities marked by a drier and purer air, better water, a more copious supply of wholesome food, and where a more favourable hygienic condition of the community generally prevails. It is evident therefore, that the occurrence of cholera at any given locality will depend upon the concurrence of certain specific and local conditions, namely, a choleraic poison pervading the atmosphere, and a local condition of aerial impurity; domestic, personal, and public filth; bad water; a crowded population, and deficient or unwholesome food. Without the concurrence of the specific and local causes thus enumerated, cholera can nowhere occur or prevail to any extent.

It is an established fact that the usual course of the disease is from a centre in more or less irregular directions; at the same time, however, its course has been more strongly impressed along the chief lines of trade and intercommunication. The grand routes of travel and traffic have always been especially marked in its progress; it has followed large bodies of men in motion, and when it has passed from one continent to another, the first cases have been observed in seaport towns, from which it has spread to the interior. Cholera has frequently attached itself to bodies of troops on their march in India, and has remained with them during many days in their passage over long tracts of country, the inhabitants of which were not suffering from the epidemic. (Burrall.) Many points relating to these attacks of marching troops in India are matters of dispute, but the fact that the disease remained with such troops for many days, while it did not prevail in the country through which they passed, seems not to be gainsaid; and here again, the inference is irresistible that the cause of the disease travelled with the troops, and affected different men in succession.

In what manner, it has been asked, is this portation of the choleraic poison along the chief routes of commerce and of travel effected? Are we to include cholera among the actually contagious diseases? To do so would certainly be in direct opposition to the conclusion arrived at by the great majority of those who have seen most of the disease, and have studied it in all its bearings with the greatest care—to the conclusion which is necessarily deducible from a mass of well-established facts collected from various and independent sources. While we have not, as yet, seen any evidence calculated in the slightest degree to shake our belief in the non-contagiousness of cholera, we are at the same time very fully convinced that, under certain favourable circumstances, it is capable of producing an infectious atmosphere by which the disease may be communicated to such as come within its influence. According to Dr. Mulig, as quoted by Dr. Read, of Boston, cholera does not appear to be contagious by simple contact with the sick, but is communicable only through the excretions, especially the stools of the sick; hence linen and bedding soiled by cholera patients, and rooms occupied by them, and ships on board of which cholera has prevailed may harbour the infection for a long time, and become the cause of new infections.

The opinion that cholera is propagatable through the medium of a specific poison contained in the dejections of patients labouring under the disease, is one entertained by a large number of the writers on cholera, and many very imposing facts have been adduced in support of its correctness. By a few, however, it is maintained that the recent discharges from cholera patients are not infectious, but become so only after they have undergone decomposition.

Dr. Snow, of London, believes that cholera is exclusively an affection of the alimentary canal, the successive stages of the disease, as they have been termed, being merely the results of the rapid abstraction of the aqueous portion of the blood throughout all the tissues, that the primary morbific impression upon the alimentary canal is always caused by the introduction of a specific poison, that this poison always exists in the matters thrown off from the stomach and bowels of a cholera patient, that nothing exhaled from the lungs or skin is capable of propagating the disease. The choleraic poison cannot, therefore, he infers, be carried to any great distance through the atmosphere; when dry, however, it may be attached to clothing or it may be disseminated through water, and in this manner carried long distances.

From a careful collation of the evidence which has been adduced in illustration of the origin and propagation of cholera, we consider it to be very clearly established, that persons labouring under the disease, or who have arrived direct from places at which it was prevailing at the period of their departure, and perhaps also their clothing and personal effects, bring with them an infection which, under certain conditions of atmosphere, etc., in the localities at which they land, is capable of producing the cholera; most probably by acting as a kind of ferment, by which the impure, stagnant atmosphere with which it becomes intermixed is converted into a morbific agent similar to itself. This view of the portation and propagation of disease was taught by the late Dr. David Hosack, of New York, in reference to yellow fever; it bears certainly the appearance of truth, and we know of no well-established fact by which it is conclusively overthrown.

Upon an examination of all we know positively of the conditions under which the cholera is generated, and the circumstances necessary for its spread from city to city, and from one continent to another, the leading measures demanded for the prevention of the disease at any given locality are readily understood. In general terms, we may lay them down to be, free ventilation, perfect cleanliness—public, domestic, and personal—the most scrupulous attention to the removal of all sources of foul emanations, miasmata or malaria—every cause, in short, of whatsoever nature, calculated to impair the purity of the atmosphere and thus afford conditions favourable to the germination of the choleraic poison; the thinning out of the overcrowded populations, more especially of tenement houses, and of courts, lanes, and alleys, the usual resorts of the squalid, impoverished, vicious, and intemperate portions of the populations of all large commercial and manufacturing communities; a sufficient supply of wholesome food and water; the avoidance of all extreme changes in diet and regimen; of all exertion calculated to produce over-fatigue, and of all unnecessary intercourse with malarious districts; the preservation of calmness of mind, and the casting out of all fear and despondency. In addition to the foregoing precautions, which appertain mainly to domestic and personal police, a very necessary precaution to prevent the introduction of cholera into a community, is the establishment of a well-regulated quarantine in respect to persons and their effects coming from an infected port or place. Into the details of such a quarantine, and the proper disposal of the sick and of the apparently well, arriving direct from ports and places where cholera prevailed when they left, we cannot enter. It is, nevertheless, a subject of very great importance, in respect to which serious mistakes are very liable to be made.

There is no general agreement as to the immediate cause of the morbid phenomena pathognomonic of cholera. The theory which is at present exciting the most attention is that of Dr. George Johnson, of London. He presumes that cholera results from the introduction of a specific poison into the body either through the lungs or the digestive canal. The most constant and characteristic effect of this poison is to excite a copious secretion from the mucous membrane of the stomach and bowels. This secretion is tinged with bile *before* collapse comes on, and also after the collapse has passed off; but during the stage of collapse it has the characteristic *rice-water* appearance, the presence of bile being detected only by chemical tests. The vomiting and purging constitute the means by which the morbid secretions are eliminated from the alimentary canal.

"The symptoms of choleraic collapse are so well known," says Dr. J., "as to need no minute description. The most important and characteristic are the following: Coldness and blueness of the skin, great diminution of the volume and force of the pulse; shrinking of the features, with a corpse-like sinking of the eyeballs; more or less hurry and difficulty of breathing, with a short, dry cough; a peculiar feebleness of voice; coldness of the tongue and breath; a sensation of burning heat in the epigastric region; great thirst; more or less complete suppression of bile and urine; vomiting of a rice-water fluid; torpor and drowsiness in a variable degree, but without delirium; and, lastly, cramps in the muscles. Most of these symptoms are present in every case of collapse; some, however, may be absent."

The pathological explanation of this remarkable train of symptoms Dr. J. refers to a more or less complete impediment, existing during the stage of collapse, to the passage of blood through the lungs from the right to the left side of the heart.

The true explanation of this arrest of blood in the lungs, Dr. J. believes to be a spasmodic contraction of the muscular walls of the minute pulmonary arteries, caused by the irritation exercised upon them by the poisoned blood; the effect of which is to diminish, and in fatal cases entirely to arrest, the flow of blood through the lungs.

We must refer to the "Notes" of Dr. J. on "the Pathology and Treatment of Cholera," for the facts and arguments adduced by him in proof of the correctness of his views. Plausible as these may at first sight appear, still, upon a more close examination, we can scarcely believe that they will be found consistent in all their parts, or to present a satisfactory explanation of the leading phenomena of cholera, or to serve as a safe basis for its rational and successful treatment.

If the phenomena which may be considered as essential to cholera, from the fact of their invariable presence in every case of the disease, be carefully examined; if these phenomena also be compared with the only lesions invariably met with in the bodies of those who have died of cholera during the stage of collapse, it must be very evident that the strongest impression of the choleraic poison is made upon the gastro-intestinal mucous membrane, giving rise to a profuse secretion of a serous, rice-water fluid. By this secretion the blood throughout the system is completely drained of its serum, and of the saline matters which it holds in solution, and which are so essential in order to sustain the blood in that condition which is essential to the regular and uninterrupted performance of all its functions.

The exaggerated secretion of the intestinal follicles must have been necessarily preceded by an active afflux towards them, and it must also be necessarily accompanied by that state of turgescence of the secretory organs which is attendant upon all augmented secretions.

"This fluxion towards the follicles of the digestive tube, among the earliest effects of the cause, whatever it may be, which is productive of cholera, is manifestly the result of the well-known law, *ubi irritatio, ibi fluxus*. Starting from the orgasm of the follicles thus alluded to, we have little difficulty in showing how the phenomena of cholera follow as natural results.

"The follicles gradually increase in size under the influence of this active fluxion to them, their secretions are augmented, and thus is produced the serous diarrhœa which constitutes the initiatory stage of cholera. As soon as the secretion is increased throughout the whole digestive tube, to a sufficient extent to quickly abstract from the blood a large portion of its elements, the choleraic symptoms appear. Previously to this, the loss which the blood suffers is slight, the circulation repairs it continually—it is insufficient to alter the blood rapidly, so as to be immediately irreparable. Thus, the intensity of the general symptoms is, *cæteris paribus*, in proportion to the suddenness of the serous secretions. A person in whom these secretions occur slowly will suffer less at the end of three or four days, notwithstanding he may have lost a large quantity of serum, than another would at the termination of an hour in whom the deperdition takes place suddenly, even though he has lost less serum. For the same reason the disease becomes very speedily fatal in those who have scarcely any discharge

by vomiting or stool, but whose alimentary canal becomes suddenly filled by the product of the secretion, and this especially in those whose vital powers are enfeebled by previous disease, irregular habits, etc.

"Debility, coldness of the extremities, feebleness of the pulse, oppressed respiration, and syncope are the immediate results of all sudden losses of blood; it is quite intelligible then how they occur in a disease where the blood is suddenly deprived of some of its most important elements; the same symptoms likewise occur in excessive serous diarrhœas, and in ordinary cholera.

"The blood deprived of its serum by the profuse secretion into the bowels, becomes thickened, and in proportion as it is rendered thick and viscid, and the propulsive power of the heart is enfeebled by the same excessive secretion will the circulation be diminished. The diminution of the circulation through the lungs causes derangement of respiration—the blood being deprived of its saline matters by the secretion in the bowels, the oxygen of the air inspired cannot effect in it those changes which it ordinarily produces during its passage through the lungs. The proper changes of the blood in the lungs being thus imperfectly effected, and ultimately entirely suspended, the portion which reaches the left side of the heart is similar to that sent to the lungs from the right side of the heart. The suspension of the general circulation and the dark colour of the blood produces a blue or bronzed hue of those parts in which the thinness of the skin permits the colour of the blood to be partially seen, like what occurs in asphyxia. The circulation being suspended animal heat can no longer be generated, and hence the body becomes cold. The lessening of the mass of fluids by the choleraic evacuation causes the shrivelling of the fingers and toes, as is observed also in some cases of profuse hemorrhage. Thus are the phenomena of collapse produced.

"In some cases the profuse secretions from the bowels are arrested or diminished, either spontaneously or from the effects of remedies. So long as the profuse secretions continue it is impossible for the absorbents to repair the loss which the blood has sustained—these evacuations being arrested, the blood is then thinned by the water taken up by the absorbents, and becomes again fitted for circulation through the vessels—and the addition of saline matters derived from the same source restores to it its capacity to undergo the proper vital alterations in the lungs. Reaction is now effected, the immediate result of which is to repair the disorder occasioned by the intestinal secretion. The excessive secretory action of the gastro-intestinal mucous membrane ceasing, the other secretions, as those of urine, of bile, etc., which were suspended during the period of collapse, are re-established. The difficulty to the establishment of reaction is proportioned to the alteration which the blood has undergone, and the morbid conditions which follow reaction result, in great measure at least, from this change in the blood. The brain here suffers more than any of the other organs, except the digestive, because of the peculiarity of the intercranial venous circulation, which by rendering the progression of the blood slower and more difficult than elsewhere leads easily to congestion. This congestion persists, notwithstanding the reaction, because the viscid and semi-coagulated blood of the sinus presents an obstacle to the re-establishment of the cerebral circulation. In the reaction congestion is reproduced, probably because while there is an augmentation of activity in the arterial impulsion in the brain, the circulation through the sinuses is still retarded."

In the outline we have thus presented of the causation of the pathognomonic phenomena of cholera we have largely borrowed, in the main textually, from a paper "On the Pathology of Cholera," read before the Philadelphia Medical Society, by the editor of this Journal, and published in the *Cholera Gazette* of November 21, 1832. To that paper we refer for a more detailed exposition of the pathological views we have sketched; views which will be found, it is believed, when compared with the facts and arguments adduced in their support in the paper from which we quote, and with the observations accumulated since its publication, to furnish a more consistent and accurate explanation of the pathology of cholera than any of the others which have been advanced.

We shall not enter into a consideration of the various plans of treatment which have been proposed for the cure of cholera. The very fact of their mul-

tiplicity and their conflicting character, is, of itself, *prima facie* evidence that no one of them has been found particularly successful. In the beginning of an epidemic of cholera, especially when the disease occurs amid a crowded and squalid population, in unhealthy localities, the disease will be found to terminate fatally in the great majority of cases. The cholera, under such circumstances, runs so rapid a course that the physician has no opportunity to benefit his patient by removing him to a more healthy locality, or to arrest his disease by appropriate remedies. A rule of universal application in cases of cholera, is that the earlier the treatment is commenced the more certain will it be in the arrest of the disease. During the stage of serous diarrhœa, with which the attack of cholera in almost every case commences, a very simple treatment will generally suffice, provided the sanitary condition of the patient be, at the same time, properly cared for, to prevent the onset of the more serious symptoms by which the stage of collapse is ushered in.

In the early stage of cholera, we have not unfrequently found venesection, cautiously practised, to be followed by a prompt amelioration of all the more urgent symptoms; in other cases, cups to the abdomen, either scarified or dry, were found equally beneficial. Pediluvia, followed by frictions to the extremities, will often be found useful. In cases where a slight serous diarrhœa is the only symptom present, castor oil, combined with a proper dose of laudanum, we have known very promptly to arrest the disease. When the diarrhœa still persists, a combination of blue mass and opium or morphia, has seldom failed to stop the diarrhœa, and, at the end of a few hours, to bring away dark consistent discharges from the bowels, followed by a complete and permanent cessation of all uneasy sensations. Attention to diet and clothing, and absolute rest, are all important. The patient, so long as the diarrhœa persists, should be confined to gum-water or rice-water, taken cold, and in small quantities at a time; for a few days after the diarrhœa has ceased, the diet should consist of well-boiled oatmeal gruel, thickened milk, crackers boiled in milk, beef-tea, essence of beef and the like. The limbs of the patient should be well rubbed with a liniment composed of two parts olive oil and four of pure aqua ammonia; these frictions have appeared to us to do good, not simply as a rubefacient, but by diminishing the exhausting perspiration with which the skin, in many cases, is liable to be constantly bathed. After the frictions, sinapisms should be applied to the ankles, thighs, wrists, arms, and epigastrium. The patient should be allowed ice-water in small quantities at a time, or, what is still better, a teaspoonful of powdered ice every ten or fifteen minutes. If the stomach of the patient will retain it, a pill composed of from one quarter to a grain of opium, and from one to two grains of blue mass, should be given every three or four hours. Under this treatment, we have found the vomiting and purging to cease, the spasms to diminish and then finally to cease, the respiration to become fuller and more regular, and the pulse stronger and more developed. After some hours, full consistent stools of a very dark colour and highly offensive, take place, followed soon by natural stools and a state of complete convalescence. Stimulants in this stage of the disease we have found invariably to do harm. The use of the warm bath was never, in our hands, productive of any good effect. Choleraic patients we have always found intolerant of heat. Occasionally, at this stage of the disease, there will be observed a marked tendency to congestion of the brain, especially in drunkards. In such case, cups to the head we have found decidedly beneficial.

When the stage of collapse has become fully established, treatment of any kind will be found of little avail. In a few cases, however, frictions to the surface with the liniment of olive oil and ammonia, stupes of spirits of turpentine to the epigastrium, sinapisms to the extremities, dry heat to the feet, and powdered ice internally, will be found to favour reaction even under the most unpromising circumstances.

In the stage of incipient collapse opiates, and every form of stimulant given internally, we have found to be productive of injury.

Of the remedial value of the treatment proposed by Dr. Chapman, of London, the application, namely, of bags of a certain form and size along the spine, we know nothing either from our own experience or that of our medical

friends. We consider the pathological views upon which the plan of treatment proposed by Dr. C. is based to be untenable, namely, that cholera is produced by a universal spastic contraction of the arteries consequent upon hyperæmia of the spinal and sympathetic centres, still we are not so sure but that the local treatment instituted by Dr. C. may, in many cases, prove beneficial. We have seen, on more than one occasion, at the very commencement of the stage of collapse, speedy and permanent reaction brought about by rubbing the surface of the patient with ice. D. F. C.

ART. XXV.—*Reports on the Extent and Nature of the Materials available for the preparation of a Medical and Surgical History of the Rebellion.* Circular No. 6. War Department, Surgeon General's Office, Washington, November 1, 1865. 4to. pp. 166. Printed for the Surgeon General's Office, by J. B. Lippincott & Co., Philadelphia, 1865.

THIS circular contains two reports; the surgical comes from Dr. George A. Otis, the present curator of the Army Medical Museum, in charge of the Division of Surgical Records, Surgeon General's Office; the medical from Dr. J. J. Woodward in charge of the Record and Pension Division, and of the Medical Section, Army Medical Museum. It has been published by the present Surgeon-General for the information of the medical officers of the army.

Of the nature, extent, and value of the surgical data Dr. Otis says:—

"The materials in the office relating to the surgery of the late war consist of the reports of the medical officers engaged in it, and of illustrations of these reports in the shape of pathological specimens, drawings, and models. The documentary data are of three kinds; first, the numerical returns, in which the number alone of the different forms of wounds, accidents, injuries, and surgical diseases is given; secondly, what may be called the nominal returns, in which are furnished the name and military description of each patient, and the particulars of the case, with more or less of detail; and thirdly, the miscellaneous reports. To the first class belong the 'classified returns of wounds and injuries' which every medical officer has been required to furnish immediately after every engagement, the 'tabular statement of gunshot wounds,' and the portion of the 'monthly report of sick and wounded' referring to surgical diseases and accidents. The second class comprises the 'quarterly reports of wounded' and the 'quarterly reports of surgical operations' required of all general and post hospitals, the quarterly 'sanitary reports' of regimental surgeons, the 'nominal lists of wounded' forwarded by medical directors after every general engagement, and extracts from 'case books.' In the third class are included the reports of medical directors of armies in regard to the operations of the Medical Department, and the succour given to the wounded; reports and dissertations on new methods and modes of treatment, and modifications of surgical apparatus and appliances; pathological researches on morbid processes pertaining to surgery, as hospital gangrene, osteo-myelitis, pyæmia, and the like; plans for ambulance organization, and the transportation of the wounded by land and water.

"The extent of these materials is simply enormous. The returns are of as huge proportions as the armies that have been engaged in active operations for the last four years. The great body of the medical officers have made the reports required of them with commendable diligence and promptitude, and their zeal is the more deserving of praise when the engrossing nature of their field duties is considered. The result has been the accumulation of a mass of facts and observations in military surgery of unprecedented magnitude."

It will be possible, it is estimated by Dr. Otis, by judicious condensation, to include in two large quarto volumes this immense mass of material. In one will be given the statistics of the graver injuries, in the other those of the less serious injuries, with an historical summary, and a discussion of the lessons derived from the records of the war.

Of the nature and extent of the data bearing on the health of the army during the war, Dr. Woodward says:—

"The matter collected is partly statistical, partly pathological. The first category embraces the medical statistics of the several armies and general hospitals. The second consists of a number of memoirs and reports by medical officers on the causes, symptoms, and treatment of the more important camp diseases, of numerous histories of cases and autopsies, of the fine series of medical and microscopical specimens in the Army Medical Museum, and of the results of the pathological studies conducted under my direction on the basis of these collections. In addition, there are a large number of descriptions and plans of general hospitals, of reports on hospital organization, and some other miscellaneous matters.

"The object kept steadily in view has been to collect all the information possible with regard to the sickness and mortality of the army during the war, and especially whatever related to the nature and causes of those affections which were the chief occasion of death and disability."

The material in the hands of Dr. Woodward he hopes to be able to digest in three quarto volumes.

It would be impossible for us to express the great gratification we have experienced in the examination of these Reports, about which we hope to say more on another occasion. W. F. A.

ART. XXVI.—*Reports of American Hospitals for the Insane:—*

1. *Of the Frankford Asylum, for the fiscal year* 1865–66.
2. *Of the Northern Ohio Asylum, for the fiscal year* 1864–65.
3. *Of the Bloomingdale Asylum, for the year* 1865.
4. *Of the Eastern Asylum of Kentucky, for the fiscal year* 1864–65.
5. *Of the Western Asylum of Virginia, for the fiscal years* 1863–64 *and* 1864–65.
6. *Of the Wisconsin Hospital, for the fiscal year* 1864–65.
7. *Of the McLean Asylum, for the year* 1865.
8. *Of the Tennessee Hospital, for* 10½ *months*, 1865–66.
9. *Of the Western Asylum of Kentucky, for the fiscal year* 1864–65.
10. *Of the King's County, N. Y., Asylum, for the fiscal year* 1864–65.

1. IN the report of the *Frankford Asylum*, for the official year ending with the close of February, 1866, Dr. Worthington says: "During the summer and fall months there was an unusual prevalence of intermittent and remittent fevers, and dysentery, in all the surrounding country, yet our patients were entirely exempt from any of these forms of disease."

	Men.	Women.	Total.
Patients in hospital March 1, 1865			66
Admitted in course of the year			20
Whole number			86
Discharged, including deaths			26
Remaining Feb. 28, 1866	26	34	60
Of the discharged there were cured	5	10	15
Died			5

Died of pulmonary consumption, 1; spinal congestion, 1; diarrhœa, 2; acute cerebral congestion, 1.

As the proper method of treating the so-called incurable insane is a subject upon which there is a diversity of opinion, and as those opinions have been recently, to a considerable extent, called out, the following extract is particularly opportune:—

"Nearly all chronic cases are susceptible of improvement by hospital treatment, and many patients of long standing, who have never had the advantages of suitable treatment, if placed in hospitals might be restored, who would other-

wise continue insane for the remainder of their lives. One patient was discharged restored, during the past year, who had been for more than ten years insane, nine of which had been passed in the asylum in a state of most distressing hypochondriacal insanity. Another, who has been nearly five years insane, has so far improved during the past year as to encourage a strong hope of her recovery.

* * * "The common idea that the incurable insane require a lower standard of medical and personal care and attention than the curable, is founded on an entire misconception of their actual wants; and the consequent belief that has been entertained by some that this class might be properly cared for in separate institutions at a cheaper rate than in hospitals for the curable, is also erroneous, and calculated to lead to serious errors in the management of the insane. Many of the feeble and helpless, of the aged and infirm, among the incurables, require fully as much personal attention as an equal number of recent and excited cases; and all the provisions made in hospitals for the maintenance of the health of their inmates are equally important to the chronic and incurable as to the curable insane. In one point of view, indeed, they are vastly more so, because by their continuous residence in such institutions, they must suffer much more for the want of such provision than the curable, who remain comparatively a much shorter time within their walls."

2. On the 1st of November, 1864, Dr. Wythes succeeded Dr. Kendrick as superintendent of the *Northern Ohio Lunatic Asylum*, and remained in office nine months, when he resigned, because his "eligibility" was disputed. His successor, Dr. Byron Stanton, was installed on the 1st of August, three months before the date of this report.

	Men.	Women.	Total.
Patients in hospital October 31, 1864	61	73	134
Admitted in course of the fiscal year	52	54	106
Whole number	113	127	240
Discharged, including deaths	43	59	102
Remaining Oct. 31, 1865	70	68	138
Of the discharged there were cured	23	33	56
Died	8	5	13

"We have had," says Dr Stanton, "an unusually sickly season. Since about the 1st of July malarial diseases have been very prevalent, in many cases assuming the form of typhoid, or, more properly, typho-malarial fever. Sanitary measures were at once instituted, but the sickness did not abate until the approach of autumnal frosts.

"The sickness was not confined to the patients, but spread through the house, but few of the employees escaping without an attack of greater or less severity."

The number of deaths from this fever is not mentioned.

3. Dr. Brown, of the *Bloomingdale Asylum for the Insane*, reports the following statistics for the year 1865:—

	Men.	Women.	Total.
Patients at the beginning of the year	80	91	171
Admitted in course of the year	68	84	152
Whole number	148	175	323
Discharged, including deaths	69	83	152
Remaining at the end of the year	79	92	171
Of the discharged there were cured	27	39	66
Died	16	12	28

"The deaths were attributable to apoplexy or its consequences in eight cases; to general paralysis of the insane in five cases; to pulmonary consumption in six; to maniacal exhaustion in four; to dysentery in three, and to inflammation of the lungs, and disease of the kidneys, in one case each."

It will be remembered that the female department of this hospital was enlarged a few years ago, while the department for males remains as formerly. Hence

the accommodations for men are inadequate to the demands, and the question of making an addition has arisen. Dr. Brown suggests the erection of another establishment for men, and the retention of the present establishment for women alone.

But the encroachment of streets and the increasing annoyances from trespassers upon the grounds, as the city extends and the population increases, are prophetic reminders of the troubles of the future, and start the further question of an abandonment of this site, and a removal of the hospital farther into the country.

4. In the report of the *Eastern Lunatic Asylum* of Kentucky for the official year, ending Sept. 30, 1865, it is said that "the buildings are full to overflowing with patients, and quite a large number of applicants are being rejected for want of room." The board of managers recommend the erection of additional buildings.

	Men.	Women.	Total.
Patients at the beginning of the year . . .	141	100	241
Admitted in course of the year	32	27	59
Whole number	173	127	300
Discharged, including deaths	21	24	45
Remaining at the end of the year . . .	152	103	255
Of the discharged there were cured . . .	12	14	26
Died	5	9	14

Deaths from variola, 6; phthisis pulmonalis, 5; epilepsy, 2; exhaustion, 1.

In mentioning the deaths from smallpox Dr. Chipley says: "I have not been able to ascertain how this terrible malady was introduced into the house. The first person attacked was a female, who had no possible opportunity for communicating with the outer world; she was never in the halls, except in passing to and from the day-rooms, had no communication with visitors who were passing through the building, and she could not, therefore, have received the contagion from them. When the character of the disease was recognized, our only resource for isolation was an effort to confine the malady to a single ward. When cases occurred elsewhere, among the females, they were removed into the ward where the malady first appeared. We had no detached building which could be converted into a pest-house, and none could be procured in the neighbourhood. In spite of this very partial isolation, and repeated vaccination, cases began to multiply to an alarming extent. Under these circumstances, it was deemed proper to procure lumber and erect temporary hospitals on the asylum grounds. Soon after one of these buildings was prepared for the reception of patients the disease disappeared."

A very large part of this interesting report is devoted to a discussion of the general subject of making provision for the suitable care and treatment of the insane. Subsidiary to this, there is an investigation of the question of the increase of mental disorders, in which the conclusion is reached that "insanity is a growing evil in every part of our country. Society is daily becoming more artificial, and new wants more imperative. Men's aspirations are assuming a more impracticable character, and sad disappointments are, consequently, more frequent and damaging. Thousands who were formerly happy and contented in their humble avocations have been seduced, by the spirit of the times, into mighty struggles for the attainment of position supposed to be conferred by wealth alone. Too many are wrecked, and come to spend the remnant of life in our wards."

Dr. Chipley estimates the number of insane persons in Kentucky at 1100; according to the national census of 1860 it was 623.

The plan of treating chronic and apparently incurable cases in county poor-houses; that of colonization, as pursued at Gheel; the modification of the latter, as proposed by Dr. Hills and some other Americans, in which incurables are to be collected in a specially constructed village upon one common farm, are severally passed in review, and severally condemned; and the author arrives at

the conclusion that the true system of treatment is that of the modern hospital, at which both curables and incurables partake of common benefits.

We have not room even for an adequate synopsis of this elaborate exposition of the merits of the disputed question, and must content ourselves with a reference to the report itself.

5. The following numerical record is extracted from the report of the *Western Lunatic Asylum* of Virginia, for the two official years terminating with the close of September, 1865:—

	Men.	Women.	Total.
Patients in hospital Sept. 30, 1863	195	136	331
Admitted in the course of two years	56	37	93
Whole number	251	173	424
Discharged, including deaths	74	43	117
Remaining Sept. 30, 1865	177	130	307
Of the discharged there were cured			14
Died			66

Deaths from marasmus, 38; pulmonary consumption, 4; "pulmonary disease," 1; pulmonary abscess, 1; diarrhœa, 3; chronic diarrhœa, 2; dysentery, 2; chronic dysentery, 1; cholera morbus, 1; congestion of the lungs, 1; hydrothorax, 1; disease of the heart, 2; cerebral disease, 3; dyspepsia, 1; epilepsy, 1; exhaustion, 2; cancer, 1; and intussusception, 1.

In allusion to the fact that, during the larger part of the time embraced by the report, the hospital was subjected to the privations of a period of civil warfare, Dr. Stribling says: "Groceries and other supplies usually deemed *essentials* in the domestic economy, assumed the place of luxuries, and these latter utterly disappeared. Thanks, however, to a kind Providence, the efforts of those upon whom devolved the labour of procuring supplies, were so far blessed that we do not believe that a single member of our extensive household suffered at any time with hunger or cold. It was most gratifying also to witness with what cheerfulness all (with but few exceptions) submitted to the necessities of their position.

"The nature and purposes of the institution seemed, throughout the protracted strife, to be recognized and appreciated by the contending hosts. The grounds and inclosures were, for the most part, unmolested, the buildings carefully guarded, and the privacy of occupants thoroughly protected. We regret exceedingly having to record the following exception."

An account is then given of an attack, on the 4th of March, 1865, by a detachment of Sheridan's troops, upon the storehouses of the hospital, and the "bearing off and destroying" of a large quantity of flour, bacon, and other supplies.

6. In the report of the *Wisconsin State Hospital for the Insane*, for the fiscal year closing with the 30th of September, 1865, Dr. Van Norstrand, says: "Our wards have been crowded to their utmost capacity during the past year, containing thirty more patients than should occupy them." He consequently urges an enlargement of the building. But the proposition has been made to convert this establishment, without enlargement, into an asylum for incurables and erect another, in some other part of the State, for curables—a proposition which the doctor strenuously opposes.

	Men.	Women.	Total.
Patients in hospital, Sept. 30th, 1864	79	91	170
Admitted in course of the year	44	43	87
Whole number	123	134	257
Discharged, including deaths	34	46	80
Remaining, Sept. 30th, 1865	89	88	177
Of the discharged, there were cured			33
Died			13

Died with phthisis, 3; exhaustion from chronic mania, 3; exhaustion from acute mania, 2; chlorosis, general paralysis, valvular disease of the heart, suicide, and "wilful self-violence," 1 each.

"The physical health of the household has been excellent during the past year, none having suffered from any epidemic or endemic disease, except during the last ten days we had eleven cases of acute miasmal dysentery."

7. The numerical history of the results of treatment at the *McLean Asylum*, in the course of the year 1865, is as follows:—

	Men.	Women.	Total.
Patients in hospital, July 1st	90	105	195
Admitted in course of the year	42	40	82
Whole number	132	145	277
Discharged, including deaths	39	46	85
Remaining, Dec. 31	93	99	192
Of those discharged, there were cured . .	15	23	38
Died	11	6	17

"Fifteen of the seventeen deaths were from chronic insanity of many years' duration, and the remaining two from the exhaustion of acute mania."

In May, 1865, the new building for the most excited men, similar to the one erected a few years ago for women, was completed.

"I do not attach too much importance to these structures," says Dr. Tyler, "in saying that they have proved that very much more can yet be accomplished for the good of the insane, by mere architectural arrangements, than has yet been attained."

These buildings were very expensive, but of their pre-eminent adaptation to the object in view there can be no doubt. It is safe to assert that they have not their equals, elsewhere.

The following extract from this report is applicable throughout an extensive geographical latitude.

"With the opportunities of observation which my position gives me, I shall scarcely be faithful to duty without briefly referring to one 'error of the times,' which is shortening many a life, and bringing many to our hospitals in a state of incurable brain disease. I refer to the intense and unceasing activity displayed chiefly in business, but extending to almost every other pursuit. Every hour of every day is given up to an unflinching and persistent devotion to whatever interests the individual. Nights and Sundays can scarcely be spared from labour, and are compressed into such small periods as shall just suffice to appease a weary frame and a very moderate conscience. No time is taken for recreation, and little for meals, and that little in a very irregular way. Every moment not spent in the keen drive of business is looked upon as lost. Every nerve is strained to accomplish just as much as is possible to unremitting exertion. Everything is done rapidly, or, in the language of the day, 'with a rush.'

"Every man has a given amount of vital force to live with and work with. His capacity for any kind of labour, whatever it may be and however it may compare with that of another, has its limit. It never can be overdrawn upon without serious damage. So much of this force as he wastes, or so much as he turns in any one direction, so much less has he for any other. If he overworks his brain his body will suffer. If he overworks his body his brain will suffer.

* * * * * * * * *

"During the last eighteen months I have seen many persons who have devoted themselves incessantly to their business, as before described, and have been sensible of a growing sense of exhaustion and inability, but have been unwilling to intermit their pursuits until some proposed object had been gained. Before which, however, the long-continued strain has proved too great, and paralysis or softening of the brain, or some incurable malady, has ended both the work and the desire to engage in it. I have also seen a large number of persons who have been sensible of the same feelings of fatigue, of a growing irritability of temper, a loss of appetite, indigestion, inability to sleep comfortably during even the short time they could spare for the purpose, of some pain in the head, and who at length have become alarmed by a slight confusion of thought, an inability to cast their accounts correctly, a great sense of weariness and a feeling of incompetency to undertake what they had all along been

earnestly engaged in, and with all this, some depression of spirits. Such persons may recover by immediate rest and careful medical treatment, but never to be again the vigorous workers they have seemed. Their danger is indeed imminent, for a single step more may place them beyond a possibility of recovery."

8. The report now before us from the *Tennessee Hospital for the Insane*, embraces the period from the 1st of April, 1865, to the 15th of February, 1866.

	Men.	Women.	Total.
Patients in hospital at the beginning of the period	94	76	170
Admitted in the course of 10½ months . .	53	21	74
Whole number	147	97	244
Discharged, including deaths			52
Remaining, Feb. 15th, 1866			192
Of the discharged there were cured . . .			25
Died			12

Deaths from maniacal exhaustion, 2; paralysis, 2; epilepsy, 1; catalepsy, 1; apoplexy, 1; phthisis pulmonalis, 1; tabes mesenterica, 1; variola, 2; varioloid, 1.

"In December, 1865," says Dr. Jones, "smallpox, which had become epidemic in the city (Nashville) and vicinity, reached the wards of the hospital, and within three weeks was developed in four separate departments within, and one without.

"We first attempted to restrain the disease by placing those infected in the fourth story; but soon the number had so increased that we removed them, and subsequently others, to a commodious farm-house. We have had twelve cases, varying in type from the most malignant variola to the mildest varioloid. There have been three deaths.

"It is worthy of remark that every case developed here succeeded well-marked vaccination, and several occurred where recent vaccination was in full state of maturation.

"We endeavoured to arrest the pestilential visitor—and probably succeeded—by a flank movement; that is, by such repeated vaccinations as we believed would exhaust the susceptibility of every one in any wise connected with the institution.

"As no new case has occurred for more than a month, we are hopeful that we shall have no more of it."

It is evident, from this report, that the hospital is in progress of recovery from the dilapidation and the devastation of the recent period of warfare.

9. By the report of the *Western Lunatic Asylum* of Kentucky, for the official year ending with the 30th of November, 1865, it appears that considerable progress had been made, in the course of that year, toward the completion of the new building. At the date of the report it was "nearly complete, in all its parts, up to the point where the west wing begins."

	Men.	Women.	Total.
Patients at the beginning of the year . .	66	57	123
Admitted in course of the year . . .	26	33	59
Whole number	92	90	182
Discharged, including deaths	18	21	39
Remaining at the end of the year . . .	74	69	143
Of the discharged, there were cured . . .	7	11	18
Died	9	10	19

The number of deaths is unusually large. "This increased mortality," remarks Dr. Rodman, "has had its origin in two causes—the character of cases admitted, and an endemic of typhoid fever by which most of the deaths were caused; perhaps epidemic would be the more proper expression in reference to the fever by which our inmates have suffered, as it has prevailed with unusual violence throughout this and some of the neighbouring counties. Diarrhœa and dysen-

tery, with their train of evil consequences, have also been prevalent during the spring and summer months."

In regard to the psychopathic effects of the recent civil strife, he says:—

"From all that I gather, there is as yet no appreciable increase of insanity since the close of the war; indeed, applications for admission into this hospital have been less frequent than for the corresponding period of last year. It may be said, and said with truth, that although the war is ended, there are still so many exciting subjects—so much to keep alive that condition of irritation, and to sustain that 'erethism' which we all know has obtained to greater or less extent among all classes of people, that that stage of depression which is the consequence of all continued high excitement has not arrived, and resulting insanity not yet become apparent; though if the war is likely to result as predicted, has not time enough already elapsed since its close to verify the opinions expressed—to some extent at least?"

10. In the report of the *King's County* (*N. Y.*) *Lunatic Asylum*, for the year ending July 31, 1865, it is said that "fifty-four more patients have been admitted than during any previous year of its history. This excess over the usual rates of admission is mainly traceable to causes and influences connected, directly or indirectly, with the war. Among the latter is the breaking up of families, by reason of the loss of life or health of their main support, which has caused the sending to this Asylum of many idiots, imbeciles, and children affected with epilepsy or convulsions, who have hitherto been cared for at home."

	Men.	Women.	Total.
Patients in hospital, July 31, 1864 . . .	168	246	414
Admitted in course of the year	141	122	263
Whole number	309	368	677
Discharged, including deaths	123	122	245
Remaining, July 31, 1865	186	246	432
Of the discharged, there were cured . . .	56	54	110
Died	32	43	75

Deaths from phthisis pulmonalis, 22; epilepsy, 8; paralysis, 7; general paralysis, 6; exhaustion of chronic mania, 5; apoplexy, 2; congestion of brain, 2; softening of brain, 2; cerebritis, 2; diarrhœa, 5; typhoid fever, 4; meningitis, chorea, hepatitis, hypertrophy of heart, valvular disease of heart, emphysema, ascites, erysipelas, old age, and suicide, 1 each.

"During the spring months," remarks Dr. Chapin, "we were visited by an epidemic of fever which, happily, was of short duration, and confined to two halls. The disease was introduced on the 30th of March, by Elizabeth Spellman," who, upon admission, had "all the symptoms of typhus. She died on the 6th of April."

"The second case was that of Mrs. Jones, who lived upon another hall, and who could have had no intercourse whatever with the patient above mentioned." But Mrs. Jones had a habit, not uncommon among the insane, of collecting and hoarding, as valuables, whatever things, valueless to others, she found in her rambles.

"The clothes of Elizabeth Spellman, which were little better than rags, were removed as soon as she was laid in bed, and carried to a distant part of the grounds, beyond the reach, it was supposed, of anybody. But they were not beyond the reach of Mrs. Jones. She unravelled the stockings and the woollens, tore the old dress into strips, and rolled them all into balls, which she deposited, with her other treasures, beneath her bed. How long she worked over these infected rags is not known, but nearly two weeks elapsed that they may have been in her possession before she was attacked with fever. She died on the 12th of May." Three patients in the hall with Spellman, and one in the hall with Jones, were attacked, but recovered. P. E.

ART. XXVII.—*Proceedings of the American Pharmaceutical Association at the Thirteenth Annual Meeting, held in Boston, Mass., September*, 1865. *Also the Constitution and Roll of Members.* 8vo. pp. 260. Philadelphia: Merrihew & Son, Printers, 1865.

INCLUDING delegates from the Colleges of Pharmacy of Massachusetts, of the city of New York, of Philadelphia, of Maryland, of Cincinnati, and of St. Louis, there were ninety-six of the six hundred and seventy-one members of the Association present at the meeting in Boston last year, representing sixteen States and the District of Columbia.[1]

The proceedings were characterized by good sense, loyalty, courteous dignity, and zealous industry in scientific pursuits. When men voluntarily associated to foster the common interests of their profession, as well as to contribute to its improvement, manifest as much earnestness and intelligence and love of truth in their work as was exhibited at this meeting, they merit, and must command general approbation.

Besides the minutes of the daily sessions of the Association, this volume contains thirteen special and nine volunteer reports and essays, as well as the reports of several committees, all of which are creditable to their authors. The latter embrace a bibliography or lists of recent publications relating to pharmacy, chemistry, and materia medica, and a summary of improvements and novelties connected with the art of the apothecary, collected from various periodicals, so that the work may be regarded as a pharmaceutic annual.

Mr. JOHN M. MAISCH reports the discovery of a new organic acid in the Rhus toxicodendron, which he names *toxicodendric acid.* He is satisfied, by experiment, that the poisonous influence of the plant on the human system is due to this principle, which is volatile.

Dr. EDWARD R. SQUIBB contributes a very admirable paper entitled, "Proposed Economy of Alcohol in Percolation, as applied to the Extracts and Fluid Extracts of the Pharmacopœia."

Scrupulous respect to the authority of the U. S. Pharmacopœia is forcibly inculcated; departure from it, and disregard of its formulæ are frequent and customary in many parts of the country. No uniformity of the strength of pharmaceutic preparations can exist so long as different formulæ and processes are followed in compounding them. Dr. Squibb truly says, "There can be but one standard, and there can be but one kind of honesty to that standard, namely, faithful obedience and truthful accuracy."

Our limits permit us simply to commend the "Pharmaceutical Association" and its work to public favour. Practitioners of medicine in the United States have reason to be gratified that the skill and integrity of apothecaries—at least of those embraced in this association—are so eminent that they can be relied on without reservation to do efficiently whatever pertains to them.

W. S. W. R.

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[1] The number of members of the American Pharmaceutical Association in each State is as follows: the States whose names are in *italics* were represented at Boston:—

Maine 10
New Hampshire 12
Vermont 5
Massachusetts 119
Rhode Island 5
Connecticut 4
New York 119
New Jersey 10
Pennsylvania 98
Delaware 4
Maryland 42
District of Columbia 12
Virginia 9
North Carolina 2
South Carolina 4
Georgia 13
Alabama 3
Mississippi 5
Louisiana 4
Ohio 74
Tennessee 5
Michigan 11
Indiana 15
Illinois 42
Missouri 17
Kentucky 5
Iowa 1
Wisconsin 3
Minnesota 1
California 13
Kansas 1
Washington Territory 1
Canada West 2
Bermuda 1

ART. XXVIII.—*Medico-Chirurgical Transactions.* Published by the Royal Medical and Chirurgical Society of London. Second series, volume the thirtieth. 8vo. pp. 340. London: 1865.

THIS volume contains twenty original communications, ten plates, and four wood-cuts. The numbers of this Journal for the past year contain abstracts of ten of the papers, and we shall now devote attention mainly to the others.

I. *Remarkable Instance of a Growth springing from the Epiglottis, which was Successfully Removed with the Aid of the Laryngoscope.* by GEORGE DUNCAN GIBB, M. D.—The case here recorded is of great practical interest and value. It shows how swallowing may be affected by causes wholly distinct from those at first suspected; and how much relief can be afforded by knowledge and skill under apparently most urgent circumstances.

This case is that of a lady, sixty years of age, who had difficulty in swallowing for two years. Dysphagia was complete with fluids, but she could swallow a little farinaceous food, such as milk and arrowroot, and a little soft bread or an egg. She had no dyspnœa except when she lay on her back in bed at night; then she coughed and expectorated during the whole night; the expectoration being mucous and frothy, sometimes mixed with blood. It was difficult, if not impossible, to pass a bougie. This condition was supposed to be owing to malignant contraction of the œsophagus. By a careful examination, in which the laryngoscope was of considerable service, Dr. Gibb satisfied himself that all the symptoms were owing to a tumour that grew from the lingual surface of the epiglottis. When this was removed, which was readily done by an écraseur, and tenderness of the raw surface had subsided, the dysphagia disappeared, and a bougie passed without obstruction or difficulty.

The tumour, which was composed mainly of connective tissue, returned locally at the expiration of nine months, and was removed as before, with the same result. A microscopical examination made at this time determined the growth to be an epithelial cancer.

II. *On Vascular Protrusions of the Eyeball,* by THOMAS NUNNELEY.—In the XLII. volume of the *Transactions,* Mr. Nunneley published a paper entitled, "An Account of Four Cases of Aneurism of, or within the Orbit." He now believes that in the great majority of similar cases the aneurism is within the cranium and not in the orbit. He believes, further, that the prominent symptoms are not essentially dependent upon an aneurism, either true or false, whether in the orbit or in the cranium, as a primary or secondary cause, but are, so to speak, secondary to it; indeed, that they may arise from other and varied causes which produced post-ocular pressure upon the ophthalmic veins. For this reason, as more in accordance with the pathology of the affection, he now uses the name of "Vascular Protrusion of the Eyeball."

In the present communication Mr. Nunneley gives the history of three cases, and of the appearances of the parts in the two post-mortem examinations, and adds some observations upon the nature of the affection.

In an appendix to this paper, Mr. Nunneley discusses the value of the objections raised by Dr. T. G. Morton, in his paper on "Orbital Aneurisms," in the April number of this journal for 1865, to the seat of the disease in these cases being post, rather than intra-orbital.

III. *Cases of Ulcer of the Lower Portion of the Ileum Communicating with the Bladder,* by JOHN MORGAN.—This case derives its interest from its rarity. The patient, a man of sixty years of age, after presenting the symptoms of a tumour in the left iliac fossa for some thirteen months, passed flatus through the urethra and had intolerable pain in the bladder. He afterwards passed some feculent matter with a large quantity of mucus. The quantity of feces passed per anum gradually increased; the bladder by degrees becoming accustomed to the novel character of its contents, ceased to pass mucus in such abundance.

He lived in this way for seven months, for the last three of which all the feces passed through the urethra. At the post-mortem examination the terminal portion of the ileum was found adherent to the bladder and communicating with it directly through an ulcer the size of a sixpence. The other portions of the intestinal tube were perfectly healthy. The bladder was much contracted, with its coats thickened.

IV. *Remarks upon Osteo-Myelitis consequent on Gunshot-Wounds of the Upper and Lower Extremities, and especially upon the Treatment of Stumps affected with Osteo-Myelitis after Amputation necessitated by such Injuries*, by THOMAS LONGMORE.—A full abstract of this excellent paper is published in the July number of this Journal for the past year. The original communication is accompanied by two plates, containing nine figures, representing abnormal appearances in various long bones affected by osteo-myelitis.

V. *Case of Aneurism by Anastomosis of the Scalp, Treated Successfully by Ligature of the Common Carotid and Setons*, by GEORGE SOUTHAM.—An abstract of this paper is published in the July number of this Journal for the past year.

VI. *Congenital Hydronephrosis in a Boy Four Years Old; Repeatedly Tapped; Recovery;* by THOMAS HILLIER, M. D.—This paper contains the history of a case where there was great distension of the abdomen from a cyst that was finally observed to communicate at times, with the right kidney. The patient was at first treated with diuretics and purgatives, from the erroneous belief that the distending fluid was contained in the peritoneal cavity. No benefit resulting, and locomotion and respiration being seriously interfered with, a trocar was introduced and a hundred and two ounces of a clear yellowish fluid were drawn off. This fluid had all the characters of dilute urine. This tapping was repeated and the canula of the trocar was left in the orifice so that the fluid could not collect. As much as two quarts would at times come away in the course of twenty-four hours. At the time of reporting the history of the case, the orifice was closed, and the child's health was pretty good.

VII. *On the Solvent Treatment of Urinary Calculi; an Experimental and Clinical Inquiry*, by WILLIAM ROBERTS, M. D. Communicated by HENRY BENCE JONES, M. D.—An abstract of this very interesting paper is published in the July number of this Journal, for the past year. The rules laid down for carrying out the solvent treatment, which are given more *in extenso* in the paper, are well worthy of study.

The conclusions to be fairly drawn from the experiments of Dr. Roberts and from the observations of others, are:—

1st. That phosphatic calculi are insusceptible to the action of alkaline solvents, but that they offer an encouraging prospect for the use of acid injections into the bladder.

2d. That oxalate of lime calculi are practically insusceptible to acid and alkaline solvents.

3d. That uric acid calculi cannot be successfully treated by alkaline solvents used as injections into the bladder, but may be by the proper use of alkalies taken internally.

A plate is attached to this paper with three figures, representing a stone composed of uric acid and oxalate of lime, removed by cutting after thirty-four days of treatment by alkalies. The solvent action of alkalized urine upon the parts composed of uric acid is very evident.

VIII. *On Delirium, or Acute Insanity during the Decline of Acute Diseases, especially the Delirium of Collapse*, by HERMAN WEBER, M. D —A short abstract of this paper is published in the July number of this Journal for the past year. Several cases similar to those here recorded have fallen under our observation, and from the difficulty we had ourselves in their management we would call particular attention to the treatment employed by Dr. Weber, from its being so eminently successful. It consisted chiefly in the very free use of

opiates, as much as one-third of a grain of morphia being given every two hours, regularly, until sleep was produced.

IX. *On Intermittent Hæmaturia, with Remarks upon its Pathology and Treatment*, by GEORGE HARLEY, M. D.—This paper contains the histories of two cases where the contents of blood corpuscles, together with granular tube-casts, were passed in the urine at certain times. The hæmaturia was transient and periodic. One of the patients had been subject to intermittent fever, so that the disease could be distinctly traced to malarial poisoning. Both cases were cured by mercurials, given to relieve intense congestion of the chylo-poietic viscera, upon which the disease was supposed to depend, and quinia. The microscopical appearances of the urine are represented by two wood-cuts, displaying nucleated epithelium, large granular corpuscles, mucus-cells, granular tube-casts, free hæmatin, and urates, but no blood-corpuscles.

X. *Notes of Four Cases of Intermittent Hæmaturia*, by WILLIAM H. DICKINSON, M. D.—In the cases recorded in this paper, the effect of treatment is not so satisfactory as in those related in the preceding. The same remedies appear to have been administered, but they may not have been given under the same circumstances, or in the same manner as regards the time and the dose.

We have several times seen, in cases of malarial poisoning, the urine to resemble porter, from the presence of the contents of the blood-corpuscles. Indeed, our attention was first called to the matter from having suffered in this way ourselves, while subject to chills of great severity. The phenomenon is to be explained, we think, by the discoveries made by M. Claude Bernard in regard to the manner in which a turgid condition of the hepatic vena portæ acts upon the renal circulation. When the vessels of the liver are too full of blood, the contents of the portal veins flow into the inferior vena cava through anastomotic veins, first discovered by this physiologist, without passing through the liver; the vena cava being full of blood, there is a reflux into the veins of the kidney, and the urinary secretion is affected. In a severe chill of ague it is easy to believe that the urine may contain blood.

It may be worth while to notice on this occasion how this peculiarity of the portal circulation enables us to understand why the thoracic duct runs so curious a course, emptying itself into the left subclavian vein, instead of simply opening into the inferior vena cava. The chyle is thus not carried to the kidneys, but is mixed with the blood before it reaches those organs.

XI. *Supplement to a Paper entitled "Further Observations on the Structure and Treatment of Uterine Polypi," published in Volume XLIV. of the Medico-Chirurgical Transactions*, by ROBERT LEE, M. D.—The number of this Journal for April, 1862, contains a review of the volume of *Transactions* in which Dr. Lee's paper on the Structure and Treatment of Uterine Polypi was published. In that paper Dr. Lee claimed extraordinary success in the treatment of these growths; of the fifty cases under his care, in all of which he had removed the polypus by operation, not one patient had died. This is attributed by Dr. Lee to his mode of operating; a ligature is applied to the root of the growth, and the greatest attention paid to preventing infection of the system from the sloughing that follows.

In this supplement fifteen more cases are related, all of them successful. They are tabulated, so as to be easily consulted.

XII. *On Amputation of the Leg by a Long Rectangular Flap from the Calf*, by HENRY LEE.—An abstract of this paper is published in the number of this Journal for July, 1865. The operation here described by Mr. Lee, and which he has practised with success, combines the advantages of both the operations recommended by Hey and by Teale; there is a thick flap from the back of the leg, and large nerves are left out of the extremity of the stump.

XIII. *An Account of a Case in which a Sixpence was lodged in the Larynx during Ten Weeks*, by J. BURDON SANDERSON, M. D., and JOHN WHITAKER

Hulke.—An abstract of this paper, together with some remarks made on the occasion of its reading before the Society, is published in the number of this Journal for October of last year.

XIV. *On a Case of the "Hæmorrhagic Diathesis."* by W. Morrant Baker.—An abstract of this paper is published in the October number of this Journal for 1865.

XV. *A Second Series of Fifty Cases of Ovariotomy; with Remarks on the Selection of Cases for the Operation*, by T. Spencer Wells.—An abstract of this paper is published in the October number of this Journal for the past year.

XVI. *On the Obstacles to the Re-establishment of Natural Respiration after the Performance of Tracheotomy. Cases, with Remarks*, by Thomas Smith.—In this paper Mr. Smith, who is an assistant surgeon to St. Bartholomew's Hospital, and to the Hospital for Sick Children, calls attention to certain obstacles occasionally met with to the re-establishment of natural respiration after tracheotomy, and which are the consequences of the operation. He does not concern himself with those cases where the cause of obstruction that may have necessitated the opening of the trachea persists after the operation.

From a consideration of the cases related by Mr. Smith, it appears that natural respiration after tracheotomy cannot be re-established, from the growth of granulations above and around the canula, narrowing or completely obliterating the passages through the larynx; from impairment or complete loss of the functions of the muscles of the larynx which regulate the admission or exclusion of air through the rima glottidis, and from adhesion of the opposed surfaces of the vocal *cords*.[1]

To avoid these contingencies Mr. Smith recommends the employment of an India-rubber flap, attached to the canula by a plug-shaped extremity. This flap, while it allows the air to pass freely through the canula in inspiration, obliges all air leaving the cavity of the chest to pass through the larynx. An instrument to fulfil the same end was invented by Luer, of Paris, but it is costly and heavy, and requires a special canula for its adaptation.

XVII. *The Application of Sutures to Bone in Recent Gunshot Fractures, with Cases; and Remarks on their Similar Use in some other Fractures and Operations*, by Benjamin Howard, M. D., Fellow of the College of Physicians and Surgeons, New York; late Assistant Surgeon, Regular Forces, United States Army. Communicated by John Birkett.—The author describes an operation by which the fractured ends of long bones are to be kept quiet, in apposition, when transportation of the patient is necessary in gunshot fractures. It is suggested also to practise it in certain other cases where there is great displacement in compound fracture. It would appear to be an operation of great value in properly selected cases; what these are we shall take occasion to discuss more fully on another occasion.

XVIII. *On the Pathology of Tetanus, illustrated by Cases and Drawings*, by J. Lockhart Clarke. Communicated by Dr. Radcliffe.—An abstract of this paper is published in the number of this Journal for last October. It is illustrated by a plate containing four figures representing morbid appearances in the spinal cord.

XIX. *On Morbid Changes in the Stomach and Intestinal Villi, present in Persons who have Died of Cancer*, by Samuel Fenwick, M. D.—This paper, of which an abstract was published in the number of this Journal for last October, is but the beginning, we venture to say, of others, that will show that cancer, as tubercle, is but a local manifestation that originates in an error of general nutrition. It is illustrated by two handsomely-executed plates.

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[1] This should always be spelled *chords;* they are strings of a musical instrument.

XX. *Fibroid Degeneration of the Lungs*, by HENRY S. SUTTON. Communicated by Dr. Barlow.—This paper is well worthy of attentive study, particularly by those interested in the study of morbid anatomy. Cases of the kind described by Mr. Sutton are usually considered under the head of "phthisis," which is, we think, an error. This paper is illustrated by four very handsomely executed plates, two of which are coloured. W. F. A.

ART. XXIX.—*Transactions of the Obstetrical Society of London.* Vol. VII., for the year 1865. 8vo. pp. 336. London, 1866.

THE first paper in the present volume of Obstetrical Transactions is an account, by Dr. W. S. Playfair, of a case of extra-uterine fœtation. The female in whom it occurred was 26 years of age, married, and the mother of two children. She dated her pregnancy from February, 1862; from which time she suffered much from pain and debility until September, 1863, when she died from pure exhaustion. Examination after death rendered it probable that the case was one of ovario-tubal fœtation. It was also clear that the fœtus had lived up to the end of the natural period of gestation—the bones being those of a full-grown fœtus. The soft structures of the fœtus were so completely transformed into a yellowish, greasy-looking mass of uniform consistence, into the midst of which portions of the fœtal bones were imbedded, that none of them could be made out, except the cranial contents, which probably escaped alteration by being shut off from the surrounding parts by the bones of the skull.

As regards the treatment of the present case, says Dr. Playfair, it is impossible to decide whether any operative measures would have afforded the patient a chance of recovery. The balance of evidence, he remarks, is clearly against the performance of gastrotomy in these cases until nature indicates the route she is likely to take in the extrusion of the fœtus, then the aperture formed in the abdominal parietes may be enlarged with comparative safety, so as to admit of the removal of the fœtus.

The volume presents the histories of two other cases of extra-uterine fœtation. Of one of these, by Dr. J. B. Hicks, an abstract will be found in the Quarterly Summary of this Journal for January, 1866. The other is related by E. Becket Truman. It occurred in a woman, 32 years of age, the mother of four children, of which the eldest was 12 and the youngest 7 years old. Death occurred suddenly, without apparently the nature of the case having been suspected. Upon a post-mortem examination, a quantity of sanguineous serum escaped from the abdominal cavity, while in the latter, extending half way between the umbilicus and pubes centrally, and from the level of the umbilicus in each flank to the pelvis, was found a mass of coagulated blood, filling up the false and true pelves. The bladder was empty; the uterus was enlarged about two diameters in each direction. It was pushed to the left side by a mass, the size of a large orange, placed on a slightly posterior plane to that of the uterus, and reaching to as high a level. On its upper surface was the opening of a small vein, from which blood could be made to issue. The mass was attached at its under surface to the pelvis by recently formed adhesions. On opening the mass, its walls were found to be of varying thickness, being at the thickest part three-eighths of an inch. To the entire inner surface was attached a placenta, much thicker at its upper part than elsewhere. A section at this part showed externally a large corpus luteum surrounded by a pinkish stroma; within this was a thin layer of a fibrous character, and between this layer and the placenta was a mass of blood coagula. Another part of the walls of the tumour was formed of the wall of the Fallopian tube, hypertrophied, with sinuses within, as in the walls of the uterus; there was also deposits of hardened coagula amidst the villi imbedding them. At certain parts, cavities like sinuses were formed, including bunches of villi. On examination under the microscope, however, they were found not to be sinuses; the tissue around them was merely fibrillated blood; no muscular wall tissue could

there be discovered. The true wall became at certain points very thin; the thickness of other parts was really owing to the solid clot of fibrin, in the cavities of which the bunches of villi protruded as if into a sinus. The muscular tissue of the tube was enlarged, as are the uterine fibres in ordinary pregnancy. The placenta was, in its microscopical elements, found to be similar to an intra-uterine one.

Between the placenta and amnion was a spotted or granulated membrane, adherent by a fibrillated substance to the placenta, but merely in contact with the amnion. The amniotic sac was entire, and contained a fœtus of at least three months' development. The pampiniform plexus of the right side was enlarged to three or four times its usual size. The opening of the right Fallopian tube into the uterus was occupied by a soft membrane. The sinuses of the uterus were enlarged; its cavity was occupied by a deciduous membrane, showing a fibrous structure with numerous capillaries, the openings of follicles and a ciliated columnar epithelium. Uterine walls softened; the canal of cervix uteri, as seen in its mid-horizontal section, very small, almost obliterated by enlargement inwards of the cervical wall. Left ovary normal, with many Graafian vesicles, and one corpus luteum, evidently of old date; its yellow colour quite gone. The left Fallopian tube with its fimbriated extremity natural.

The relation of the foregoing case gave rise to considerable debate, particularly in reference to the diagnosis of cases of extra-uterine fœtation, and the possibility of operative interference to save, if possible, the life of the mother. Though many very interesting suggestions were thrown out, nothing conclusive was arrived at.

The description of a case of *double monstrosity*, with an account of the delivery, is given by W. Wills, Esq. The present volume of *Transactions* embraces no less than seven papers, descriptive of different forms of fœtal deformity. It is important, certainly, that all such cases should be put on record. By a comparison of a large number of fœtal deformities occurring under the same or different circumstances, it is fair to infer that much additional light may be thrown upon the physiology of fœtation, and the causes by which are brought about the several deviations from the normal development of the fœtus occasionally met with. But the details of these different malformations would interest only a limited number of our readers, and we must therefore proceed at once to notice matters of a more practical character.

A case of embolism of the pulmonary artery after ovariotomy is related by Dr. E. Parson. The fibrinous deposit was firmly adherent to the greater part of the wall of the right auricle, particularly so in the auricular appendage, where the deposit seems to have begun, and which it almost filled, being accurately moulded to the little muscular eminences. The clot was continued through the tricuspid valve into the right ventricle, almost filling the auriculo-ventricular opening. In the right ventricle it was intricately interlaced with the chordæ tendineæ. As the clot extended along the pulmonary artery to the lungs, it was tubular, and adherent to one of the semilunar valves of the pulmonary artery. Dr. P. believed the deposit to have occurred before death, and to have contributed materially towards shortening the life of the patient. Death took place on the fourth day subsequent to the operation for ovariotomy. A post-mortem examination, besides the clot in the heart, revealed the existence of diffuse peritoneal inflammation of a low form, with a few ounces of sero-purulent fluid in the peritoneal cavity; but little lymph was found anywhere.

Our principal object in noticing especially the paper of Dr. Parson is with the view of presenting to our readers the following commentary of Dr. Richardson, so replete with good sense and sound practical views.

Dr. Richardson observed that Dr. P., in his report of the case, had used the word "embolism." "He regretted this, because the fibrous generation in the heart before the Society was, in truth, not an embolus, according to the strict use of that term; he regretted it also, because the term ought never to be used. 'Embolism' and 'thrombosism' were, in fact, absurd terms, and were doing a great deal of harm, by leading the mind away from the pathological fact to mere terms that had no meaning at the best, and that were constantly misconstrued. At the same time, he was very happy to see the subject of fibrous

deposition receiving at last the attention it deserved. When, fifteen years ago, he revived this question, for, in truth, the question is only a revival of the labours of Chisholm, Gould, and other writers of the two preceding centuries, he was considered as putting forth false notions in pathology, and it was boldly averred that these concretions were always formed after death. The concretion in the present instance, Dr. R. said, was one of the finest specimens he had ever seen of a tubular character. Such a deposition would give rise to a very slow death, extending over two or three days. He next described the symptoms of concretion in the right side of the heart, and remarked that the diagnosis was so plain that the precise location of the clot in the cavity could be determined before death. The view he had formerly held, that these concretions were not produced by the introduction of septic poisons, but were of inflammatory origin, he admitted, must be modified. He had learned by experiment that fibrin might separate in the blood, not only in consequence of a direct increase of it, but by introducing into the mass of blood decomposing substances. Great obscurity, however, still surrounded the inquiry. The same poison that in one experiment would render the blood of an animal universally fluid, would, in another experiment, lead to deposition of fibrin. He could attribute this fact but to one circumstance, viz., that the condition of the air, the meteorological condition at the time of infection, was the determining cause of the course of degeneration that would ensue." In speaking of treatment when signs of concretion are present, Dr. R. remarks, "The remedy really to be looked for was a substance that would rapidly dissolve fibrin, and leave the blood corpuscles intact; such a remedy injected into the veins might probably be of service, but its discovery almost implied a paradox. One point of practice, however, was open to those who performed such operations as ovariotomy. It was to institute an inquiry as to whether the external influences of heat, humidity, barometric pressure, and ozone, did or did not affect the results of the operations. He would recommend that the exact meteorological condition shortly before and shortly after days of operation should be kept, and it should be noted what periods were most favourable to recovery, and what most unfavourable. As these are cases which can wait for the proper period, it was possible the fatality might be lessened by a knowledge thus obtained, of the time when they may be performed with the least danger of evil consequences.

Albert Napper, Esq. gives an account of the amputation of the arm in a female during the seventh month of pregnancy. The place of amputation was about the middle of the humerus, for a scrofulous destruction of the elbow-joint. The progress of the patient after the operation was most favourable. The stump healed well; her appetite returned, and she quickly recovered her usual animated expression of feature. As regards her pregnant condition, she never experienced the slightest inconvenience, either at the time or subsequently.

We have next the "Annual Address" of the retiring President, Dr. H. Oldham. Its leading subject is the condition of the Society, its progress, how it has worked, and the changes which have transpired in it during the past year. Dr. O. indulges in some very pertinent remarks on the importance of rearing up a higher and better instructed class of monthly nurses, by a proper course of instruction and training; due attention being paid to the fitness of the pupils in respect to age, health, character, and general aptitude for the office of nurse in the puerperal chamber.

Dr. Greenhalgh exhibited a uterine polypus, weighing about 1 lb. 9¼ oz., removed from a woman æt. 40, married ten years, never pregnant. The patient was put under chloroform. The polypus was seized with a pair of strong vulsellum forceps, and, owing to its large and expanded form, was divided at its anterior third, which on being pulled through the external orifice of the vagina enabled a large and firm pedicle to be reached, which was cut through by a strong pair of curved scissors. There was little bleeding during and none after the operation. Dr. G. strongly urged the desirability of cutting away these growths, and upon the far greater safety of removing them *in situ* to making forcible traction upon the uterus, to bring them within easy reach of the operator.

Dr. B. Woodman presented a specimen of numerous fibroid tumours from

the uterus of a woman about forty years old, married, but of loose character; had never had any children. Of these tumours, numbering about fifteen altogether, some were within the uterus, some in its walls, and some growing out of them into the peritoneal cavity. The os uteri was extremely small and circular. Dr. W. considered the specimen interesting from the connection between unfruitful sexual excitement and fibroid growths.

The same gentleman gave the history of a case of "Chancre on the Os Uteri." The patient was a married woman 21 years of age. She exhibited in a marked degree, the "dirty looking anæmia," or "washed-out" appearance of syphilitic cachexia. Some doubt rested, however, upon the diagnosis. She took iodide of potassium, and steel, with the application of perchloride of iron to the sloughing sores found on the tonsils, etc., and a liberal diet. At first she improved—the right tonsil, which had bled at first rather profusely, began to stop sloughing and to granulate healthily. Soon after, however, she began to refuse food, had slight cough, and some diarrhœa. A few days subsequently, after a slight exacerbation of diarrhœa attended with severe abdominal pain, she died rather suddenly on sitting up in bed. Upon a post-mortem examination, there was found on the posterior lip of the os uteri, and partly involving the right commissure, a well-defined chancre nearly the shape of but larger than a horse bean. The anterior wall of the vagina, which lay in contact with it, had a sore of almost exact identity in shape and appearance, but without any induration. After the patient's death, her husband admitted having had sores "a long time ago," and a "running" more recently.

After two articles which have already appeared in the Quarterly Summary of this Journal, follows the address of the President elect, Dr. Robert Barnes. The address is chiefly taken up with a vindication of the home or domiciliary clinic for the instruction of the obstetrical student, as practised in England, over the hospital clinics of the continent of Europe. Dr. B. maintains that the home clinic "gives the nicest training for the responsibilities of practice," and better secures the comfort of the parturient female; augmenting the chances of well doing in both mother and child, and better guarding the first more effectually from the more dreaded of the maladies incident to childbed. Another portion of the lecture is devoted to a consideration of the position and duties of the obstetrician—his relation to the medical profession, and the character of the cases which fall properly under his care. The organization of the medical profession being very different in England from what it is in this country, the remarks of Dr. B. have little in them to interest directly the American midwife.

J. Rouse, Esq., relates a case of recovery of a still-born child, with unusual marking of the skin, simulating the effects of injury. The child was seen by Mr. R. nearly half an hour after birth. It was said to have been still-born. On examination, the child, a female (the funis had not been interfered with), was, with the placenta, found lying clear of the mother. No action of its heart could be detected, nor any attempt at respiration, the surface was white and cold, the lips livid. After a few moments a very slight twitching about the muscles of the chest was detected. The child was immediately immersed in a warm bath, and, after more than half an hour's perseverance in the Marshall Hall plan, varied occasionally with inflation of the lungs by the mouth, respiration was established—it was, at first, much impeded by spasmodic action about the glottis. To remove the thick coating, especially about the throat and chest, of vernix caseosa, gentle washing with a sponge dipped in oil was resorted to, while the child was still in the bath. This brought to light upon the child's throat, just over the larynx, a patch of abrasion as large as a crown piece and as though caused by a forcible compression with the finger and thumb. There was not the slightest cause, however, to suppose that the child received any kind of violence either during or after birth. The respiration improved gradually, the spasm diminishing. In about half an hour from the first attempt to induce respiration, the child cried, at first feebly and hoarsely. At the end of the second day the mark upon the throat had entirely disappeared, the breathing and swallowing having become both perfect and easy.

A. Harris, Esq., relates a case in which a membrane was expelled from the uterus a few days before delivery at full term. The history of the case is some-

what as follows: On the 3d of April, 1863, the woman gave birth to her second child, which she suckled until November 28th, 1863, a period of seven months, when it died. From April 3d, 1863, to February 6th, 1864, a period of ten months, she had no menstrual or hemorrhagic discharge. There then occurred a sudden loss of blood, with clots and other symptoms as in abortion. On May 9th, 1864, she quickened; on September 3d the membrane described was expelled, and on the 12th she was delivered of a fine healthy child. On the supposition that this third child was born at full time, the woman must have become pregnant about December 7th, 1863, while on February 6th, 1864, the symptoms of abortion occurred. These facts, therefore, render it extremely probable that the membrane in question was the decidua of a fœtus expelled in February, 1864. Drs. Hewitt and Meadows, to whom the membrane was submitted for examination, remark, "that the only possible explanation of the retention of the membrane until the 12th of September, is, that the uterus of this woman is either partially or completely double; that she conceived of twins in December, 1863; that one fœtus was situated in one division of the uterus, and the other in the other; that only one fœtus reached maturity, the other perishing at two months or earlier, while the decidua appertaining to it remained shut up in its own division of the uterus until the time of its expulsion, September 3d, 1864."

George Roper, Esq., presents some facts to controvert the commonly received opinion that labour in primiparous women late in the reproductive period of life, is almost necessarily severe and difficult. Mr. R. would, from his own personal experience, conclude that difficulty in such cases is the exception rather than the rule.

Dr. A. Meadows relates a case of imperforate anus in a young infant, in which an unsuccessful operation was performed. We see nothing especially instructive in the history of the case.

The President showed a fibroid tumour removed by him from the posterior wall of the uterus, partly by enucleation, partly by excision. The cervix was artificially expanded by incisions and mechanical dilatation. The tumour was then drawn down by means of a hook inserted in its lower part; transverse incisions were then made in it by means of a staphyloraphy knife. Its remaining attachments were then removed by the scissors. There was little hemorrhage. At date of report the patient was doing well.

Dr. J. B. Hicks exhibited an improvement in the mode of fastening the rope on his ecraseur, which will allow any length of rope to be used, thus doing away with the clumsy addition of the endless drum of Weiss.

Dr. Greenhalgh showed a new form of uterine tent made from the hollow stem of the *Laminaria spiralis*. Also a new pelvimeter, in which the index-finger is made available for the purpose of measuring the size of the pelvic brim.

The President exhibited an instrument which he had used for some time past for dividing the cervix uteri in certain cases of dysmenorrhœa, metrorrhagia, and sterility. It resembles the scissors used for the same purpose by Dr. J. M. Sims.

Dr. J. Marion Sims exhibited a new form of Curette for the removal of uterine fungoid granulations.

Dr. Aveling presented a new Hysterotome and Intra-Uterine Spring Tent.

Messrs. Weiss and Son showed a very portable case of instruments for operations on the uterus and vagina. It contains three silver-ended sounds of various sizes, caustic, blue stone, and lint holders, three knives, J. M. Sims' angular hook, double pointed hook, twisted double hook, and stem for introducing spring uterine tents, with two handles which fit all the instruments.

Dr. Barnes laid before the members an instrument made for him for the purpose of facilitating the introduction of the perforated laminaria tent into the cervix uteri.

It is with very great difficulty that a perfectly correct idea of an instrument can be formed from a simple verbal description. We have, therefore, merely given in one connection a list of the several obstetrical instruments to which the attention of the Obstetrical Society of London was called during its sessions of 1865, referring such of our readers who may desire a description of them, to

the volume of *Transactions* before us, where many of them will be found delineated very accurately in a well-executed series of wood engravings.

A very curious case of laceration of the integument of a fœtus occurring during delivery, is related by Mr. R. K. Peirce. After a protracted labour, the child was suddenly expelled without manual interference, a few minutes before the arrival of the physician. On the latter removing it from under the bedclothes it gave a feeble gasp and then expired. The funis was found broken off quite close to the belly of the child; a little blood was flowing from it. On further examination a laceration was detected through the skin and integuments, about on a level with the scrobiculus cordis, laying open the abdominal cavity from side to side, and exposing the entire upper surface of the liver. The wound had all the appearance of having been made by some sharp instrument; this, however, was completely negatived by undoubted testimony. In the neck, extending transversely, was a similar laceration of the integuments, exposing the deeper seated vessels and muscles. When first seen blood was oozing from both wounds. The head was found to be a mere membranous sac; no vestige of bone could be felt anywhere except at the base of the skull. The lower extremities were arrested in their development and strongly curved inwards.

Drs. Hurley and Meadows who, by appointment, examined the child, remark that the point which especially attracted their attention was the remarkable facility with which the skin could be torn. It was hardly possible to stretch it in any direction without an immediate laceration. It was also extremely thin, beneath it there was little or no areolar or connective tissue, but only bundles of fat vesicles heaped together. Under the adipose layer was a smooth glistening tissue, over the surface of which the skin could very easily glide. The skin under the microscope exhibited hardly any yellow elastic fibrous tissue. It was also very deficient in white or ordinary connective fibrous tissue. To the absence of these two elements, which Drs. H. and M. regard as the result of arrested development, they ascribe the peculiar physical characters of the skin with its feeble powers of resistance. An opinion corroborated by the condition of the skeleton, every portion of which still remained almost entirely in the cartilaginous state.

"Looking to the facility with which the skin could be torn, and to the remarkably flexible character of the entire skeleton, admitting of its being easily bent in any direction, we are of opinion, say Drs. H. and M., that the presentation was an abdominal one, and that the lacerations in the abdomen and neck resulted from the necessary stretching of the skin in the exit of the fœtus through the vagina. From the result of microscopic investigation, we are further of opinion that all the peculiarities of skin and skeleton were due to a simple arrest of the ordinary process of development."

Dr. A. Rasch relates a case of œdema of the lower half of the body, occurring after a fall in the seventh month of pregnancy—induction of premature labour—recovery. The patient, 24 years old, had always enjoyed good health. At the end of the seventh month of her second pregnancy, she slipped while carrying her child, 16 months old, up a flight of steep stairs, falling down about a dozen steps upon her right breast and belly. She felt great pain, and next day was swollen throughout her belly and legs. When first seen by Dr. R., some nine days after the fall, the expression of her countenance was that of perfect health; tongue clean, intellect undisturbed. No œdema of face, or any portion of the upper half of body. Right mamma tender from bruise. Enormous anasarcous swelling of the abdomen as far up as the navel; the skin was raised into large blisters, each corresponding to the area between two of the cicatrices from former labour. Right hypogastrium more swollen, resistent, and more painful than right. Both legs and feet œdematous; right a little more so than left—no pain in them. Labia distended into huge water bladders, with distressing pain. A vaginal examination showed the anterior lip of the os uteri œdematous. Head presentation. Strong movements of fœtus. Urine freely passed, quite clear, of usual colour; loaded with albumen—but no casts—pulse natural. To remove the cause of the œdema and prevent gangrene, the induction of premature labour was decided upon and effected, some fifteen days from the date of the accident. The child was born alive, but died at the end of half an hour. By

the fifth day after delivery all the œdema, and all the albumen of the urine had disappeared. The patient soon recovered and continued afterwards perfectly well. Dr. R. accounts for the œdema and the albuminous urine in this case, by supposing that through the fall which the patient had experienced the gravid uterus was pushed upwards and backwards, especially on the right side, so as to produce such an amount of pressure at the lower part of the inferior cava, as to impede the reflux of the blood from the lower portions of the body.

Mr. H. W. Sharpin relates a case of enormous ovarian dropsy occurring in a healthy looking woman, æt. 54, in which ovariotomy* was successfully performed. Two points in this case we are told, are worthy of note, one, a freedom from adhesions of cyst, and the other, the serious symptoms which after the operation seemed to threaten an unfavourable result, and which were solely due to the removal of the pressure which had been exerted, perhaps for some years, upon the lungs and bladder by the enormous dropsical ovary. It is impossible to know to what extent the thoracic and abdominal viscera may have been displaced and compressed, but the bloody purulent matter discharged from the bladder, and the violent and incessant coughing, which really foreboded immediate danger to life, but ceased immediately upon the application of a tight bandage, showed very clearly that a portion of the lungs and the bladder had been compressed to a serious extent.

Dr. J. B. Hicks relates the case of a large fibrous tumour of the uterus, in which spontaneous sloughing took place, followed by acute peritonitis and death. The patient was 40 years old, married, but sterile. Had suffered for many years from extensive uterine hemorrhage, rendering her appearance always anæmic. She had also suffered for many years from tertiary syphilis.

The President exhibited a large fibroid tumour, expelled spontaneously from the uterus several weeks after labour. It consisted of fibre-cells, resembling those of the muscular wall of the uterus. The patient was actually under care for vesico-vaginal fistula.

Dr. W. B. Woodman relates two cases of hydatidiform degeneration of the chorion, associated with albuminuria. The first was in a married woman, 36 years old; the mother of four children. Had one miscarriage. Catamenia regular for six months afterwards, then absent for six months. Believed herself pregnant. Abdomen greatly distended with fluid. Some general anasarca most marked in lower extremities and labia pudendi. Cardiac murmurs with systole at both base and apex. Urine scanty, albuminous, no casts. Flooding set in and continued, more or less, for eight days, when, with labour-pains, there was suddenly expelled a mass, two to three pounds in weight, of hydatids, varying in size from that of a large gooseberry to that of a pin's head. With these was some degenerated spongy placental tissue. No traces of echinococci or other parasite. The structure of hydatids was evidently that of cystic disease of chorion. Most of them had undergone fatty degeneration. Some contained blood, others albuminous fluid. Os uteri interior had a rugged hard appearance, as if fissured. Liver apparently diminished in size. Patient doubtless too fond of stimulants. The patient recovered.

The second case was in a single female 24 years old, who, however, had reason to believe herself pregnant. She was admitted into the London Hospital with general anasarca, especially of lower extremities; there was also œdema pulmonum, with dyspnœa, and some bronchitis. For about three and a half months catamenia absent. For six weeks preceding her entrance into hospital, had almost continual flooding, preceded by pain in back and frequent calls to urinate. Abdomen greatly enlarged. Has a brown line on its surface, with numerous lineæ albicantes, as also on upper part of both thighs. Breasts large, but rather flaccid, wide and large areolæ; follicles evident; venation less than was to be expected. Os uteri reached with difficulty—was patulous, with a velvety feel, and filled with a soft spongy body. Distinct *bruit placentaire*. No sound of a fœtal heart. Urine rather scanty, loaded with albumen, with a few granular and epithelial casts, and a kind of general moulting along all the genito-urinary tract. On the 14th of April, 1864, flooding set in with pains like labour, and on the fifteenth there began to be expelled hydatidiform bunches, with considerable hemorrhage. As the hand could not be introduced into the uterus, plugging

was first resorted to, then ergot. In the evening a wash hand basin full of hydatids, from the size of a grape to that of a pin's head, was discharged. Some had slender pedicles, others were closely attached. No trace of echinococci. Patient much exhausted by the hemorrhage; vomiting continued during 16th and 17th April, with great dyspnœa and retention of urine. She died on the 18th, apparently of syncope.

On examination after death, body found still œdematous; had a very blanched look. Breasts contained milk. Pericardium loaded with some six ounces of yellow serum. Mitral valves a little thickened, not quite competent. Both sides of heart partially filled with soft yellowish clots. Lungs much congested at their bases. Otherwise healthy. Liver pale, yellowish, rather soft; its acini unusually well marked. A good deal of serous fluid could be squeezed from it. Kidneys large, of about twice their average weight, like white marble, with arboriform vascularity. They were softened, their cortical substance diminished, pyramids unusually well marked. Spleen soft, diffluent. A good deal of turbid flaky serum in abdominal cavity. A purulent fluid in pelvis. Both ovaries very large, studded with cysts, of which one or two in each ovary contained blood—one or two had apparently burst into peritoneal cavity. Fallopian tubes contained cord-like fibrinous casts. Uterus, size of small fœtal head, rather flabby, its walls about an inch thick, covered with a spongy mass as of hydatids, much discoloured. Sinuses would admit a large goosequill. Its cavity would contain about six fluidounces.

A third case, similar in character to the two foregoing, is related by Dr. R. Barnes. The patient was 42 years old; the mother of eight children, had aborted thrice. June 17th, considerable anasarca of legs, commenced three weeks previously. Has suffered for twelve months from sickness and tenderness, with occasional vomiting. Has headache in recumbent posture; drowsy. Face pale; tongue furred, yellowish; great thirst; urine scanty, high coloured, sometimes very pale; in passing it pain at bottom of stomach. Has suffered for two months from burning pain in region of womb. Her last child three years old, was suckled two years, reducing the mother's strength. Had at three months an abortion, about a year previously. Since, until Christmas, menstruation regular, from that time a slight discharge now and then. During last two months a continuous discharge of coloured fluid. Pulse rapid, feeble. On 18th June whilst in bed had a vaginal discharge; on rising passed a large quantity of blood, leaving her very anæmic; pulse 108; headache. No pain preceded hemorrhage. Supposed herself pregnant. A tumour existed at the usual seat of pregnant womb, firm and elastic, tender on pressure. Os uteri the size of a shilling. Substance of cervix, just beyond orifice, rigid. No placental murmur or fœtal sound to be detected. On upper part of left side of tumour there is a small mass the size of a walnut, which slips about under the fingers, very sensitive when compressed. Breasts quite flaccid. Galvanism was applied to uterus, which contracted, and a bunch of hydatids were brought down. Vagina now plugged and abdomen bandaged. Removal of plug at night allowed the discharge of more hydatids, with slight oozing. Uterine tumour much smaller. The patient blanched and weak. Ordered eggs, brandy, tincture of ergot, and laudanum. Passed a good night; abdomen sore on pressure; a small quantity of hydatids again removed, causing uterine contraction. After a shivering fit another mass of hydatids was passed with pain like that of labour. Womb now firmly contracted, the size of a cocoanut; pulse 132, prostration, abdomen tender, vomiting, great debility, some rigidity of arms, stupor, retching, sighing. Three ounces bloody urine drawn off. She died during the night of June 19th.

Sectio cadaveris.—Abdomen tympanitic, integuments becoming emphysematous. Four or five ounces turbid serum, with flakes of lymph, in pelvic cavity. Intestines very pale, uterus size of a cocoanut, peritoneal coat and whole structure very pale, walls flabby. A fibroid tumour the size of a large orange in the right wall near the neck. The cavity contained a brownish flocculent membrane, half detached, but no hydatids. Left ovary contained small cysts. Kidneys large, pale, and considerably advanced in fatty degeneration. The placenta was almost entirely converted into cysts, some as large as a walnut. The cysts were held together only by shreds of chorion, fatty looking and easily lacerated.

Chorion full of granular fat, exhibiting no trace of vascularity. Walls of cysts were composed of delicate fibrous membrane, with nuclei interspersed, and some bright fat granules. The decidua was a loose shred, consisting of elongated fibres and nuclei somewhat fatty.

Dr. B. Woodman showed a dermoid cyst, removed after death from the right ovary to which it was attached, apparently in the situation of the pons ovarium. The ovary itself was converted into an enormous polycystic tumour, larger than the gravid uterus, filled with colloid matter, in which were a few cells, many nuclei; granular matter, and exudation corpuscles in great abundance. No evidence of malignancy. Ovariotomy would have been performed, had not, apparently from the bursting of one or two of the cysts, peritonitis early set in and destroyed the patient. Her age was 47, married, but separated from her husband. Two attempts at tapping had been made some weeks before death, but the colloid matter would not run through the trocar. Turning the dermoid cyst inside out displayed two rudimentary teeth, and hairs, growing from its inside. Its contents were hair and sebaceous matter.

A curious case of serous tumour in the occipital region of a new-born infant much larger than the child's head, is related by J. Waits. The tumour continued to enlarge rapidly. A puncture into it with a grooved needle gave discharge to a quantity of serous fluid. The infant's body gradually wasted, and it died about three and a half months after birth. Shortly before death the tumour had attained the size of a two pound loaf. An examination after death showed an opening in the occipital bone large enough to admit the index finger, through which the membranes of the brain with a portion of cerebral substance protruded. The tumour was divided through the centre, laterally, by the membranes. The child's neck was very short—the chin resting on the sternum.

Anteflexion of gravid uterus. Dr. G. Hewitt related a case in which anteflexion of the uterus, which existed before pregnancy, and had been nearly cured, was found to be present at the fourth month of pregnancy, to such an extent as to interfere with the rising of the womb out of the pelvic cavity. The os was found high up in the vagina, and the body of the uterus tilted forwards and pressing deeply on the bladder. The soft parts greatly swollen, micturition very frequent, acute pain. Patient ordered to lie in bed. In three days the uterus was liberated from the pelvis, and the symptoms were relieved. Dr. H. stated that anteflexion of the gravid uterus was very rare—he had not met with any description of it.

A most interesting paper on the varieties of form imparted to the fœtal head by the various modes of birth, is presented by Dr. Robert Barnes. Of this paper we shall not pretend to present to our readers any analysis. To do so in a manner that would furnish to them any useful idea of the facts it sets forth would demand far more space than it would be proper to devote to a single subject, however interesting, which, like that of which Dr. B. treats, can lead to no immediate and daily recurring practical application. After noting one or two of the author's preliminary remarks, we must refer our readers to the paper itself for information in respect to his researches into the varied moulding of the fœtal head during the different modes of birth. The paper is illustrated by some twenty-eight diagrams. These diagrams, drawn from nature, bring out conclusions "not without interest in illustration of the mechanism of parturition."

"For example, the occipital elongation producing the sugar-loaf head, resulting from protracted labour, under the ordinary vertex presentation, with perhaps slight contraction of the pelvis, is familiar to every one. But the accompanying lateral and asymmetrical moulding which the head undergoes has been little if at all noticed. Yet it is made manifest by the accompanying diagrams. As far as Dr. B.'s observations go, they seem to prove that under all modes of birth, if the head is even a little delayed in its transit through the brim, it will be equally moulded on the two sides. The side which is squeezed against the promontory of the sacrum will be always somewhat flattened, whilst the side which is directed towards the symphysis pubis, suffering generally less compression, preserves more of its nomal rotundity.

"There is still another peculiarity in the form impressed upon the head during

labour. It is one very difficult to represent by diagrams, sections, or even by photographs. It is nevertheless real, and becomes evident on observation of nature. The pelvic canal may be likened to a rifled gun. It is so constructed as to render the propulsion of the fœtal head in a direct course impossible. The head is made to revolve on its own axis during propulsion in a great degree as a conical ball revolves in its passage from a rifled gun. The difference consists mainly in the circumstance that in the case of the head this is at starting nearly globular, and acquires its conicity in transitu. Now this cone, being the result of the moulding of a plastic body pursuing a helicine course, is somewhat twisted or screwed, and the lowermost or presenting apex is not formed in the median line of the head, but on one side of the sagittal suture. The deformation of the head is therefore threefold: 1. Elongation, or conification; 2. Asymmetrical flattening of one side; 3. Twisting of the conified portion upon its axis.

"As a general rule, it may be stated that the point of the fœtus which presents in the axis of the brim, which has to lead the way, so to speak, for the rest of the head, undergoes more or less bulging out or elongation. Thus, if the vertex presents, we have the common sugar loaf moulding; if the face or forehead presents, the forehead will acquire undue, even monstrous prominence, whilst the occipital region will be flattened in."

"For a long time after birth it will generally be possible, by careful observation of the head, informed by such knowledge as may be gathered from the accompanying diagrams, to tell what was the presentation, and how the child was delivered. This is a point not without interest in a medico-legal aspect. It is true, generally, that after birth the head quickly returns towards its natural globular form, but this return is only approximate, it is rarely complete."

The diagrams are so arranged in Dr. B.'s paper as to exhibit in order—1st. The natural or standard form and size of the fœtal head at term; 2d. The forms imparted to the head under turning in contracted pelvis; 3d. Head born after turning, brim contracted, face presenting; 4th. Head born after craniotomy—an exceptional case; 5th. Forms acquired under tedious labour, terminated by forceps. No special illustration is given of the modification of form impressed upon the head in first labours of the ordinary kinds with head presenting. The form so acquired, is according to Dr. B. the same in character as in lingering labour, but generally less in degree.

Dr. Barnes exhibited the uterus of a woman who had died after simple tapping. There was extensive ascites, with advanced cirrhosis of the liver and old and recent peritonitis. One Fallopian tube had become occluded by inflammation, and then distended in a cystic form by an accumulation in it of fluid.

Dr. J. Way relates the history of a case of twin pregnancy in which one child had apparently arrived at full term without any defect of development. Its presentation, as well as the progress and termination of labour, was natural. The other fœtus, which seems to have perished at about the fourth month of intra-uterine life, had been felt in the first stage of labour presenting between the bag of membranes and the living child, and the posterior wall of the uterus. It was easily moved upwards, and ceased to be felt as the head of the mature child descended. It was expelled with the placenta, to which it was attached by a slender cord. The portion of the placenta into which the cord was inserted was dense, hard to the touch, yellowish in colour, and under the microscope presented the aspect of fatty degeneration. The larger portion of the placenta, including that into which the cord of the mature child was inserted, presented nothing abnormal.

Fred. Lawton, Esq., relates a very curious case of vascular (erectile) tumour in the sheath of the funis of a new-born infant. The tumour was of the size and shape of a medium jargonelle pear: its neck communicating with the cavity of the abdomen through the umbilical opening, and strongly adherent to the cord, the coverings being common to both. The cord was divided above the tumour. The tumour felt tough, rather fleshy. When the child cried it, as well as the investing membranes and tegumentary portion of the umbilicus enlarged very much; the tumour from engorgement of blood, and the membranes from protrusion of intestine. Pressure reduced the one, and somewhat diminished the size of the other. The hernia being returned, pressure was applied by means of

a pad and bandage. No change occurring after a day or two, the outer covering of the tumour, over its fundus, was carefully divided, when a little yellow serum exuded. A small opening was now made in the second covering, through which blood of a dark colour flowed pretty freely; a pad and bandage were immediately applied. On the third day subsequently, the integument around the umbilicus was found to be much inflamed, the umbilical opening was large enough to admit four fingers, and more or less oval; at its lower part protruded a knuckle of gut, at its upper the non-pulsating pyriform tumour; the cord was at the right-hand side, between the protruding gut and tumour. The membranes were gangrenous and the fundus of tumour bare; itself of a dark colour; to the touch, it felt firm, unless strongly compressed, when it became reduced in size and somewhat flaccid. No impetus was given to the tumour when the child cried.

It was resolved to reduce the hernia, and then apply a ligature around the neck of tumour, and excise it. Upon applying the ligature, in consequence of the gangrenous condition of the membranes, it cut through them. The abdominal muscles at the same time becoming rigid, eight to ten inches of gut were protruded. The tumour was now excised above the ligature, the cord retied as low down as possible, and the protruded intestine carefully returned. While the stretched integument was kept intact, four common needles were passed through and secured by the twisted suture, and then a pad and bandage applied. Until three days after the operation the child's bowels were not moved, then they acted freely. In consequence of deficiency of milk on part of mother the child was nursed by a neighbour. It was ordered small doses of brandy; it had no bad symptoms—entire recovery.

Dr. R. Greenhalgh relates a case of pregnancy with extreme distortion of pelvis; craniotomy, cephalotripsy; Cæsarian section; death thirty-one hours after latter operation. The dimensions of the pelvis were from one anterior superior spinous process to the opposite ten inches; external antero-posterior diameter $4\frac{3}{6}$ inches; transverse diameter of brim 5 inches; conjugate diameter, left side, $1\frac{3}{4}$, right side, $1\frac{7}{8}$ inch, oblique diameter $4\frac{3}{8}$ inches, transverse diameter of outlet $3\frac{3}{8}$ inches, antero-posterior, 3 to $3\frac{1}{2}$ inches, oblique, 15 inches; from centre of sacrum to upper part of pubic arch $2\frac{3}{4}$ inches, from top of sacrum to coccyx $4\frac{3}{8}$ inches.

Dr. G. was induced to attempt delivery *per vias naturales* in this case, even knowing as he did the great deformity and contraction of the pelvis, because, 1. The patient during her first labour had been thus delivered; 2d. The child was premature; 3. It was a footling presentation; 4. The child was dead.

"I must confess," he remarks, "I was most anxious, as I always had been, to avoid the Cæsarian operation, which I have now performed six times, because it has been said that I have sought every opportunity to deliver by that operation. The experience which I have derived from this and other cases of craniotomy and extraction in *extreme* distortion of the pelvis, has determined me for the future never again to attempt delivery *per vias naturales* unless there are fully two inches in some part of the antero-posterior diameter of the brim. I believe that craniotomy and extraction by the crotchet or cephalotribe in cases of extreme deformity of the pelvis is more difficult and probably more fatal to the patient than the Cæsarian operation, and, moreover, by the latter operation, if timely performed, there is even a probability that the child's life may be spared."

In connection with the foregoing we will notice a later paper of Dr. R. Greenhalgh, on the comparative merits of the Cæsarian section and craniotomy in cases of extreme distortion of the pelvis. The general conclusion of Dr. G. is the same as that laid down in the above paper.

"After weighing the facts thus adduced, as far as they go, I feel confident," he says, "that the most sceptical must admit that the mortality to the mother is as great, if not greater, from craniotomy and crotchet operations in *extreme* distortion of the pelvis, as in the Cæsarian section; whereas, by the latter, which is a far easier operation and therefore requiring less dexterity, the child stands a chance of life, which by the former procedure is wholly precluded. Nothing could induce me again, even under the most favourable circumstances,

to attempt delivery by the crotchet where the conjugate, true diameter of the brim does not fully measure two inches, exclusive of the soft parts. Cases have arisen, and will again arise, where a larger space exists, but where, either from a generally distorted or altered shape of the pelvis, or from great exhaustion, or from inflammation and swelling of the passages, or malposition of the child, and more especially where the child is alive, in which I would not hesitate to prefer the Cæsarian section to craniotomy."

How are we to secure the conditions most favourable for the success of the operation? "By avoiding," Dr. G. replies, "the routine midwifery alluded to in an early part of this communication, and by making a special study of each case as soon as it represents itself. Further, I must strongly protest against the too rigid observance of that oft-repeated axiom that 'meddlesome midwifery is bad,' which, however good in days gone by, when the practitioner was comparatively ill informed, and midwifery instruments were of rude construction, has, in the present day, tended to foster a system of unnecessary and even dangerous delay. In conclusion, I am quite confident that far fewer evils result from too early interference than from too great delay; I will, therefore, venture strongly to impress upon my hearers that *laissez faire* midwifery is bad."

Dr. Barnes exhibited a voluminous fibroid tumour weighing one pound and thirteen ounces, removed from the uterus of a lady. It partly occupied the pelvis, but the greater part rose above the symphysis into the abdomen. It was removed by elongating it by transverse or spiral incisions, and then enucleating and bringing it away. Recovery perfect and uninterrupted.

Dr. Russell laid before the Society the particulars of a case of hydatiform degeneration of the ovum, removed by hand from the uterus of a female forty-five years old. Previously to its removal the abdomen in its size gave the appearance of a seven or eight months' pregnancy.

Dr. Aveling related a case of ovariotomy, in which the pedicle was tied and returned, and the ligature removed in forty-eight hours, with complete recovery. In this case Dr. A. used two hollow coils of iron wire to secure the ligature, though he believes that one would have been sufficient. Mr. S. Wells, in commenting on this case, remarked that no one method of dealing with the pedicle could be applicable in all cases of ovariotomy. "A long pedicle was dealt with so successfully by the clamp that he desired no better method; but it was still doubtful what was the best mode of proceeding when the pedicle is short. Tying it and cutting off close to the ligatures, and returning it and ligatures, often gave excellent results. But in feeble persons, where copious serous effusion might be expected, and it appeared desirable to maintain an opening for drainage, the plan of the earlier ovariotomists, of leaving the ends of silk or twine ligatures hanging out through the wound was so unsuccessful that the wire coil of Dr. A. would probably prove of great advantage in cases of short pedicle in weak patients.

Mr. G. Roper relates a case of difficult labour connected with a non-evoluted and hypertrophied state of the cervix uteri. Death fifteen days after delivery from pyæmia. "This case," remarked Dr. R., "presented one of the greatest obstetrical difficulties I have met with. The patient from loss of blood, the case being one of partial placenta prævia, and from the length of time she had been in labour, was in a state of serious exhaustion when I commenced her delivery; several times it was thought proper to abandon further attempts at delivery in consequence of a belief that she was actually moribund. The resistance of the os externum constituted the chief difficulty. One of two ways of proceeding only could be adopted—evisceration and dismemberment of the fœtus, or craniotomy, with or without turning, with a certain amount of force necessary to extract the body entire. The first method must necessarily be long and severely trying—scarcely to be endured by the nearly worn out powers of life. In the second, with a more speedy delivery, there is the risk of injury to the uterine structures by the needed force, however judiciously applied. In the present case the latter course was pursued, and although no laceration nor fissuring happened, it is presumed that a degree of bruising and straining of the cervical textures must have resulted sufficient to cause suppurative action and conse-

quent pyæmia, the more likely to occur after a labour complicated with placenta prævia." No examination after death could be obtained.

Dr. Routh exhibited a specimen of fibro-cystic disease of the uterus. An exploratory incision had been made for its removal, and failed. Constant sickness, due doubtless to chloroform, continued with little intermission for thirty-six hours. Death was due to hemorrhage from rupture of vessels within the cysts. The growth was highly vascular. Brown's actual cautery had been used on portions of the mesentery with perfect success.

Dr. J. B. Hicks exhibited a polypus weighing two and a quarter pounds removed by the wire rope écraseur. Before removal it reached from the vulva to the umbilicus. The patient did well.

Dr. Ritche exhibited a dermoid cyst developed in the Fallopian tube. It had been suggested that some ovarian tumours result, not so much from disease of the ovary, as from intra-ovarian development of an ovum, that, in point of fact, some ovarian tumours are analogous to the different forms of moles met with in the uterus. It had been objected that, if such were true, then we should expect to find occasionally dermoid cysts in the uterus, similar to those developed in the ovary. Dr. R. has met with many recorded cases of intra-uterine dermoid cysts, but they had almost invariably been considered as cases where an ovarian tumour had ulcerated through the uterine walls, and thus entered the uterine cavity. He had never met with an intra-uterine dermoid cyst, he now, however, exhibited to the Society a dermoid cyst developed in the Fallopian tube. It was about as large as a plum; it contained four loculi, filled, originally, with a creamy fluid. Each loculus was lined with a serous-looking membrane, studded at intervals with projecting dendritic growths, similar to those so frequently met with in ovarian cysts. It contained also a plate of bone one and one-half inches long by about half an inch broad. Probes passed through the Fallopian tube from its uterine and fimbriated extremities; they did not enter the cavity of the cyst, but impinged against its external envelope. So close was the connection between the cyst and dilated Fallopian tube that artificial separation was impossible.

The specimen had formed part of the Fallopian tube of a lady upon whom ovariotomy had been performed. Both ovaries were extensively diseased, and it was certain that the tumour above described had formed no part of either of them.

Dr. Greenhalgh relates a case of which the following is an outline. A female applied to him for what she supposed to be "falling of the womb." There was a swelling, about the size of a large walnut, protruding about an inch from the orifice of the vagina, and arising from the posterior margin of the os uteri. As she was four and a half months advanced in her fifth pregnancy, any interference with the growth was at first deemed unadvisable. Within a fortnight, however, it had increased in size to that of an ordinary orange, causing protrusion of the cervix uteri, and producing such local irritation as to induce Dr. G. to attempt its removal. The tumour was somewhat pedunculated and very vascular. A clamp was applied on its upper part close to the os uteri, and by it considerable pressure was made for some minutes, after which the entire mass was slowly burnt off on the distal side of the clamp. Not a drop of blood was lost. For eight hours the patient experienced no pain, labour then set in, and at the end of sixteen hours the fœtus in its membranes was expelled. A careful microscopic examination proved the tumour to have been simply a hypertrophy of the tip of the uterus.

Dr. G. also exhibited a large fibrous uterine tumour 6½ inches in length, 11½ in circumference, and 6 around the pedicle, which he had removed by Weiss' wire écraseur. The patient, æt. 38, mother of several children, had suffered for two and a half years from uterine hemorrhage by which she had become greatly reduced. After taking some ergot, the polypus was expelled from the uterus into the vagina, which it completely blocked up, occasioning retention of urine, which required the frequent use of the catheter.

Dr. R. U. West describes a very curious and unusual variety of the battledore placenta. The several varieties of this abnormal form of the placenta constitute

a subject of very great interest, though one of comparatively little practical importance.

Two cases of obstructed labour are related by Professor Berry, of Birmingham. The last especially of these cases teaches us that in the practice of midwifery "our treatment of difficult cases should not always rest on what is possible, but upon what can be done safely and for the best interests of both lives."

Several papers in the present volume of *Transactions* have been passed by without notice, inasmuch as an abstract of them has already appeared in the quarterly summaries of this journal. D. F. C.

ART. XXX.—*On Diseases of the Veins, Hæmorrhoidal Tumours, and other Affections of the Rectum.* Entirely rewritten. By HENRY LEE, F. R. C. S., Surgeon to St. George's Hospital, &c. &c. Second edition. 8vo. pp. 190. London: John Churchill & Sons.

IT is not easy to say which of the two parts of which this volume is composed is practically the more important or interesting to professional readers. That on diseases of the veins, although a second edition of a well-known Jacksonian Prize Essay, published so long ago as 1850, still has the advantage of greater novelty of pathological views as well as of more serious gravity in the nature of the maladies discussed. The second part, however, is scarcely less valuable in its therapeutic suggestions and its clinical accounts of the endless characteristics and varieties of a class of affections which cannot be too closely and constantly studied under the guidance of such a teacher as Mr. Henry Lee.

Among all the numerous works upon the subject of diseases of the rectum, we have not met with one which presents, within so small a compass, a greater amount of clear and positive instruction in regard to the points of diagnosis and treatment upon which a practitioner in active service, or a hospital surgeon, would like to be informed or to have his own experience and practice efficiently sustained. No one can read the different chapters of this part without gaining something from the perusal, which he would not be likely to derive from the more systematic works; and hence we feel disposed to recommend it alike to juniors and seniors as a genuine and very useful clinical guide.

The peculiar modes of treatment long since recommended by the author are to be found chiefly in the chapter on hæmorrhoidal tumours, and comprehend the surgical treatment by nitric acid (as originally resorted to by Houston of Dublin, and more recently advocated by Henry Smith of London), singly, or in combination with incision; the instrument devised, in 1848, by the author for clamping the tumours or mucous membrane, to provide against hemorrhage; the uses and applications of these methods; excision, combined with the use of the acid, or actual cautery. Preferring one or the other of these methods, according to circumstances, he does not entirely exclude the ligature; and carefully points out the cases in which he would advise the employment of the latter.

For a fuller idea of the opinions of Mr. Lee, in this second part of his volume, and of his agreeable and instructive mode of illustrating and expressing them, we must refer to the well-filled pages of the book.

The first part will interest a large number of inquirers as the latest exposition of the questions concerning purulent infection, pyæmia, septicæmia, phlebitis, thrombosis, embolism, and other verbal representatives of different morbid processes about which a great deal has been said, thus far, to very little definite and practical purpose, so far as curative indications are included. The vast and terrible experience of the last four years, in this country, has rendered all really sound discussion of these hitherto mysterious and too often irresistible forms of disease, of great value to hundreds who formerly might have paid little attention to such subjects.

Every effort in an authoritative form, especially within the convenient limits of Mr. H. Lee's essay, and with his practical illustrations and applications, will

be gladly received and, doubtless, earnestly seconded in a more enlightened study of these most difficult topics. We need much further investigation of the phenomena already so well studied by Mr. Lee, and other later pathologists, not only to direct us in the rational treatment of these frightful disorders, but to deliver all classes of teachers and students from the still puzzling confusion of language so prevalent in regard to them. Mr. Lee's new essay does much to lighten our path in many respects, and helps us over some formerly insurmountable difficulties; but even his pages will involve the reader more or less in the same trouble as to definitions—a trouble which must probably continue until the precise nature of the conditions supposed to be meant by purulent infection, septicæmia, pyæmia, and other such terms are better understood.

The chief practical, or rather therapeutical, points of Mr. Lee's work on the disorders of the venous circulation are to be found under the head of treatment of acute phlebitic disease by surgical and mechanical means; also in the chapters on varicose veins and on varicocele. In these chapters he gives a very interesting and instructive account of his well-known operation for the obliteration of venous trunks by means of acupressure, with the gum-elastic band, and subcutaneous section of the vessel between the pins.

One of the principal objects of his publication, he tells us, is to demonstrate how far the mischievous results of the current of blood through an injured or disordered vein carrying whatever it may have received *towards* the central vital organs, may be remedied or prevented; "and how far the system may in certain cases be saved from the dangerous train of symptoms which naturally follow the disintegration, decomposition, and removal of blood-clots in living animals." The task here proposed appears to have been so well performed, in addition to that undertaken in the second portion, that we feel bound to recommend the whole as a new and valuable production which ought to be considered at far greater length than we can here afford to it, and which certainly should, as we hope it may, have a wide circulation in this country. E. H.

ART. XXXI.—*Lehrbuch der Hebammenkunst.* Von Dr. BERNHARD SCHULTZE, Professor der Geburtshülfe, Director der Entbindungsanstalt und der Hebammenschule zu Jena. Mit 62 Holzschnitten. Zweite Auflage. 8vo. pp. 288. Leipzig, 1864.

Compendium of Midwifery. By Dr. B. SCHULTZE, Professor of Obstetrics, Director of the Lying-in Institution and of the School for Midwives at Jena. With sixty-two wood-cut illustrations. Second edition.

WE have seldom met with a more admirable compendium of midwifery than the one before us. Concise, but sufficiently clear and comprehensive, it presents to the student a most instructive exposition, in bold outline, of the anatomy of the female, especially of her pelvis and generative organs, with their functions, the form and structure of the fœtal head, the history and progress of pregnancy and of natural labour, phenomena of the puerperal period and that of suckling, with the proper treatment during these periods of both mother and child. Having disposed of these subjects, we are next presented by the author with a notice of the more prominent of the deviations from the general course of pregnancy, childbirth, and of the puerperal period generally, and of various causes, as well on the part of the mother as on that of the child, by which the period of suckling may be disturbed.

The compendium of Dr. S. is confined to the history and management of natural labour, or that which can be terminated with safety to the mother and child without the necessity of manual or instrumental interference; the work being prepared mainly for the licensed midwives of Saxony, who are prohibited from performing any operation beyond those which may be required to facilitate the progress of a case of natural labour. Though thus confined in the scope of its teachings, the work will nevertheless be found by the younger students of

midwifery to be a very valuable introduction to the study of the more profound treatises on obstetric science and art, or preparatory to the bedside instructions given in a clinical school.

The work is illustrated by sixty-two very excellent wood-cuts—among certainly the very best, for accuracy and clearness, we have yet seen. They are executed with a boldness and freedom which remind us of the etchings of some of the older masters.

In order to illustrate the changes which occur in the height and bulk of the womb and the position of the os uteri during the progress of gestation, and the corresponding changes in the form and size of the abdomen of the pregnant female, Dr. S. gives a diagram having a perpendicular row of figures showing the height to which the fundus of the womb attains by the end of the 16th, 20th, 24th, 28th, 32d, 36th, and 40th weeks of pregnancy. Other numbers, commencing with 0 for the line of the abdomen in the non-pregnant female, indicate the shape and projection of the abdomen and the position of the navel at the termination of the 28th, 36th, and 40th weeks of gestation; while other numbers, placed within the pelvis, show the position of the os uteri in the non-pregnant female, and at the close of the 8th, 24th, 36th, and 40th weeks from conception. Dr. S. has issued in a separate and much enlarged form, and in colours, the same diagram; we do not, however, perceive that it gives any clearer or more precise idea of the facts the diagram is intended to illustrate than that which occupies rather less than a page of the volume before us. The idea of this diagram is a very good one; with some slight improvements it might be rendered still more useful to the student of midwifery. D. F. C.

ART. XXXII.—*Disease; a part of the Plan of Creation.* The Annual Discourse before the Massachusetts Medical Society, May 31, 1865. By BENJAMIN E. COTTING, M. D. 8vo. pp. 45. Boston: David Clapp & Son. 1866.

THE author of this well-written annual discourse endeavours to show that disease is a part of the plan of the creation—"one of the myriad expressions of Divine thought," and "not a mere accident in the history of our race, or due to unwarrantable experiment upon our powers of endurance." He conjectures that "the idea of Disease must have originated in the Creator's mind, and its development formed a part of the plan of creation from the beginning. The ultimate purpose of such a plan it is not for man to determine. Deliberately devised, diseases do not necessarily imply 'gratuitous malevolence;' for, despite of some philosophers, it is quite possible to conceive of the earth and all that is therein, simply as an expression of Divine thought, without reference to the question of good and evil." To sustain such a notion the author brings forward testimony gathered from fossil remains, among which have been found evidence of caries, necrosis, exostosis, anchylosis, reunion of fractured bones, "of recovery from the most extensive lacerations, involving bony structures, by the fangs of other animals," &c.

But the absurdity of Dr. Cotting's vagary, in substance that God created a class of invisible but malevolent entities of many genera and species designed to pursue and torment and destroy every individual of the human race, as well as every organic being on the face of the earth, is self-evident. These malevolent entities are presumed to be as indestructible as matter and force; and, for this reason, when any one of the species takes possession of an organism, the wise and prudent course of the individual is to quietly acquiesce, and prayerfully expect it to abandon the premises when it finds them too strong to be destroyed. It is vain to seek for causes of diseases with a view to avoid them. He says that "common diseases in ordinary seasons" and "the severer cases of epidemics in all seasons, may never be satisfactorily accounted for by the external surroundings of the victims. After most careful investigations, writers are compelled to admit that there must be some unknown condition, some cause

not understood, other than the poverty, privations, filth, and locality of those attacked." And because writers conjecture that "some unknown condition" is the cause of disease, he asserts that "the simple explanation is to be found in the idea of an original Plan, as we are attempting to demonstrate. With this as the guiding idea, how much more intelligible become such investigations of disease; how much easier the unravelling of the laws which govern organized existence; how much time saved, now lost in a fruitless search for specific causes!"

The author seems to think that because an unknown cause of certain diseases is admitted at this time, the researches of medical philosophy should cease for the reason that their labours must be in vain. Had Dr. Cotting's hypothesis prevailed a century ago scurvy would be now as unavoidable and incurable as it was then; and we should still be ignorant of the influence of vaccination in diminishing the mortality of smallpox, as well as of the mode of extinguishing intermittent from whole districts or regions of country by changing the condition or circumstances of the soil. If we admit disease to be an entity created by the Almighty in the beginning, we must also admit that its destruction by man's efforts would be as futile as an attempt to annihilate matter or force. It would be idle to combat ague with quinia, or itch with sulphur or with any other means. We should be reduced to purely expectant practice, assisted by amulets and charms, the royal touch and prayers.

Dr. Cotting says: "Time was (our own day embraces it) when it was publicly taught, that mercury given to salivation was not only the specific, or antidote, for iritis, but absolutely essential to its successful treatment; now, one of our number has been justly called a public benefactor for showing that such practice is not only unnecessary, but often grievously detrimental in that affection."

Yet, we may suppose, on this notion that disease is a part of the plan of creation, that iritis was included among created entities, in spite of this evidence of improvement in the treatment of a formidable affection. Else how can the author of this improvement be assumed to be a public benefactor. To conjecture that disease is a part of the creation and imply therefore that its cause is inscrutable, is not clearly consistent with the assertion that a physician is a public benefactor who discovers a means of curing or removing it. We concur with Dr. Cotting in his opinion that "False assumptions are dangerous expedients, and the most ignorant will ever be the most likely to practise upon them. Truth is weakened by any addition of error; and the profession that allows it must in the end abandon its own self-respect."

Unless we have grossly misconceived the views of our author, they are erroneous, and, if accepted, calculated to retard rather than assist a rational pursuit of truth. If diseases were included in the original plan of the creation, how are we to explain the appearance of affections which are recognized to be of recent origin by the most learned in the profession? Did cholera exist while Adam was in Eden?

Every organism, whether animal or vegetable, has a finite character, or in other words, is so constructed that it can possess the property of vitality only during a limited period. This possession may be lost without the agency of violence or of disease, unless extreme age be a malady. Hence it is quite fair to conjecture that the perfect equilibrium of the functions of each organism, which constitutes the state of health, may be disturbed, impeded, almost arrested, constituting disease, or entirely stopped, which is death, from the influence of physical forces operating both within and without. Disease is incidental to every organism; it is contingent upon the conditions or circumstances to which it may be exposed, and in this sense only may it be philosophically regarded as a part of the plan of creation. It seems plausible to suppose that each organism was in its contrivance so nicely balanced in all its parts that disorder and death are necessarily incidental to it within the period assigned it to live. There seems to be no more conclusive reasons for conjecturing that fevers and pestilences were special contrivances included in the design of the universe than there is to imagine that the genesis of monsters, which are met with in every genus of organism, or the fracture of bones, the laceration and incision of flesh were originally devised as specific parts in the plan of the creation. Just as

wounds are resultants of the action and reaction of physical forces on organic masses in a mode satisfactorily observed by the senses, so may diseases be resultants of the action and reaction of forces on organic molecules in an unknown manner, varied in accordance with the quantity and tension of the forces and the properties of the matter subjected to action? When molecular motions in all their relations are fully understood, it seems probable that this wonderfully complex problem, the cause or genesis of disease, will be more readily solved than it is now. At any rate, we are not yet prepared to accept the transcendental doctrine that disease is of divine origin, in the sense suggested by Dr. Cotting, and was included as a specific part of the organic world.

W. S. W. R.

ART. XXXIII.—*Researches on the Medical Properties and Applications of Nitrous Oxide, Protoxide of Nitrogen, or Laughing Gas.* By GEO. J. ZIEGLER, M. D., Physician to the Philadelphia Hospital; Member of the Medical Association, Member of the Academy of Natural Sciences of Philadelphia, etc. etc. 12mo. pp. 66. Philadelphia: J. B. Lippincott & Co., 1865.

MESSRS. J. B. Lippincott & Co. are entitled to credit for the mechanical excellence of this very thin volume, from which we have been enabled to gather very little information about nitrous oxide, but whether this is attributable to any defect in the author's manner of treating the subject or our own want of perception may be a question. He claims for it wonderful powers, but relates no instances or experiments to sustain his assertions. He says, for example, it is "particularly indicated in the various ataxic and adynamic fevers, such as the typhus, typhoid or enteric, congestive, yellow, remittent, intermittent, and all others of a similar type. Nitrous oxide is, moreover, of general application and quite efficient in scarlet fever, measles, diphtheria, variola, constitutional syphilis, erysipelas, gangrene and kindred maladies. It may likewise prove more or less useful in sunstroke, pyæmia, purulent infection, puerperal fever, and necræmic and toxicæmic affections generally, those from septic poisons and the virus of venomous and rabid animals inclusive.

"The stimulant, depurant, and antidotal properties of protoxide of nitrogen also render it peculiarly valuable in the treatment of another variety of toxicosis from the inordinate and continued use of alcohol, tobacco, and opium, as well as those sudden and dangerous states of intoxication from over-doses of the same, and the poisonous effects of belladonna, aconite, hydrocyanic acid, chloroform, carburetted hydrogen, carbonic acid, and perhaps also all others of a like character."

If the author possesses any reliable testimony calculated to prove that the assertions implied in the above sentences, or even to render his conjectures plausible, we beg leave to suggest, he would do well to adduce it when his work shall reach another edition. Credulous as very many members of the profession may be in many respects, they are not prepared to accept any author's unsustained assertion that nitrous oxide is at once the antagonist or antidote of such a variety of different diseases and drugs as are above named.

Speaking "of the *modus operandi* of nitrous oxide in the production of insensibility," he uses the following remarkable language: "As before stated, the ordinary effects of protoxide of nitrogen upon the animal economy are actively and permanently stimulant, accelerating all the vital operations by increasing chemico-organic and bio-dynamic action. Thus while chemically it rapidly arterializes the blood and promotes elemental interchange, molecular activity and organic metamorphosis, dynamically it stimulates the nervous system, sensorium, and general functions of life. But when taken freely the physiological processes are accelerated to such a degree as to temporarily overcome systemic excitability and cause partial interruption of vital activity from overstimulation, the stimulus overbalancing excitability or the momentum being greater than the velocity, on the same principle as without exhaustion a horse may

be 'taken off its feet,' and its pace materially diminished by immoderate driving, the impetus being greater than its capacity for speed. Besides this there may probably be such an abundance of carbonic acid engendered by the energetic oxidation as to check in some measure chemico-organic reaction and dynamization, and thus induce vital inertia and insensibility."

The late Dr. Wm. P. C. Barton published his inaugural "Desertation on the Chymical Properties and Exhilarating Effects of Nitrous Oxide Gas" in the year 1808. We conjecture that the concluding sentences of his work might be quoted as a suitable close of the essay before us. He says: "The human mind delights to rove through the flowery fields of speculation, and scarce can two connected facts present themselves to its observation, than it immediately infers some consequent conclusion. If these are illusions that 'have *cheated* while they *charmed* the dazzled mind,' they have afforded me a pleasure that is not alloyed by a consciousness of their instability and hypothetical nature. If they are the phantoms of a dream that, when I wake, shall be melted into air, I will still dream on, and exclaim with Ferdinand in the Tempest,

> 'This is a most majestic vision, and
> Harmonious charmingly.'"

W. S. W. R.

ART. XXXIV.—*A Manual of the Principles of Surgery, Based on Pathology, for Students.* By WILLIAM CANNIFF, Licentiate of the Med. Board, Upper Canada; M. D. of Univ. New York; M. R. C. S., England; formerly House Surgeon to the Seaman's Hospital, New York; late Professor of General Pathology and the Principles and Practice of Surgery, Univ. Victoria College, Toronto, C. W., etc. etc. etc. 8vo. pp. 402. Philadelphia: Lindsay & Blakiston, 1866.

THIS manual is evidently the production of a man who is well informed on his subject, and who moreover has had experience as a teacher and as a practitioner. He has profited by the study of the best authors on the principles of surgery, tested practically their doctrines, and has presented his own views, well arranged and clearly expressed, for the advantage of others.

The subjects treated of are arranged and divided into five divisions, and these into forty-seven chapters. A first chapter treats of nutrition, development, growth, assimilation, the formative process, ordinary decay, repair, and the conditions necessary for repair. The divisions treat of inflammation and the diseases arising out of inflammation; of the healing process and diseases of the healing process; of external injuries, contusions, and wounds; of diseases of certain tissues, bones, joints (including fractures and dislocations), arteries, and veins; and of morbid growths.

We recommend this work, as an excellent treatise, both to persons beginning the study of surgery and to those who have been long engaged in its practice.

W. F. A.

ART. XXXV.—*The Malformations, Diseases, and Injuries of the Fingers and Toes, and their Surgical Treatment.* By THOMAS ANNANDALE, F. R. C. S., Edinburgh Lecturer on Surgery, Assistant Surgeon to the Edinburgh Royal Infirmary. The Jacksonian Prize Essay for the year 1864. 8vo. pp. 292. Philadelphia: J. B. Lippincott & Co., 1866.

THIS work is a valuable one, both intrinsically and also accidentally, for it is, we believe, the only one treating specially of the same subjects. It is divided into seven chapters, treating respectively of congenital affections, of inflammatory affections, of tumours, of injuries, of non-congenital contractions and dis-

tortions, and of excisions of the bones and joints of the digits, and of their amputations. It is handsomely printed, and illustrated by twelve plates, containing a hundred and twenty-seven figures. W. F. A.

ART. XXXVI.—*A Lecture on Posterior Staphyloma, with special reference to two singular Cases, with a Supplementary Note on Posterior Staphyloma (so called) and Hypermetropia, with Illustrations.* By J. F. STREATFEILD, F. R. C. S., Assistant Surgeon to the Royal London Ophthalmic Hospital, and to the Eye Infirmary of University College Hospital, &c. pp. 18, with two coloured plates. London: John Churchill & Sons, 1866.

LITTLE was known of posterior staphyloma before the invention of the ophthalmoscope; it was only after death that this affection could be recognized. In the interesting lecture of Mr. Streatfeild, he clearly points out the appearances revealed by the ophthalmoscope, which characterize this pathological condition, and relates two very interesting cases of the disease.

Mr. S. classifies this affection into stationary and progressive staphylomata.

The elongation of the antero-posterior axis of the eye in this disease occasions myopia, and this usually first induces the patient to seek advice.

In the stationary kind the great characteristic of an ophthalmic examination, as pointed out by our author, is a white crescentic mark touching the optic nerve entrance, and embracing it more or less, and sometimes encircling it altogether.

In the first of the two cases described by Mr. S., its singularity consisted in this—"*a posterior staphyloma existed without any connection with the optic nerve entrance.* An ordinary posterior staphyloma existed in this eye, the right, but chiefly on the inner side of the optic nerve entrance, away from the extraordinary staphyloma which was quite separate and altogether unconnected with it. This, the ordinary staphyloma, was not therefore in the most usual situation, or rather, as it extended round the whole circumference of the optic nerve entrance, it should be said that the crescent, the widest part of the staphyloma was rather, but not exactly, on the opposite side of the optic nerve entrance to that on which it is usually found. As far as the ordinary staphyloma was concerned, the left eye of the patient was symmetrically affected, but there was no other resemblance between the two eyes, and no initial stage of the extraordinary staphyloma, that could be recognized, in the left eye. The larger and extraordinary staphyloma of the right eye was of about twice the diameter of that encircling the optic nerve entrance. It occupied the region of the yellow spot. It reflected light very brilliantly as from the bottom of a hollow, from one part or another particularly as the light was thrown into it. Its margin was surrounded by irregular streaks of black pigment, some of them being within the margin, as if it had increased in size, and they had been left there. Its margin fell a little out of the circle on the side towards the optic nerve entrance, as if it would be likely to join with the staphyloma in that situation; but there was a broad bridge of perfectly healthy looking choroid, retina, &c., between the two staphylomata. Many of the short ciliary arteries were seen entering the large staphyloma, through the sclerotic, generally in pairs, through little slit-shaped openings common to the two. Some of them seemed to me to go to the sclerotic itself. Their course seemed also to indicate the deep hollow of the staphyloma. They were very fine, and did not seem to have a forward course, but were generally curved into the staphyloma. The choroidal epithelium in the neighbourhood of the large posterior staphyloma was all around it much more distinctly pigmented than elsewhere, and on the inner side of the optic nerve entrance the choroidal vessels could be very distinctly seen."

The ophthalmoscopic appearances of the eyes in this case are exhibited in a coloured plate, as are also those in the second case.

We recommend this lecture to the careful study of ophthalmic surgeons, as containing much information, and as throwing light on an obscure affection.

ART. XXXVII.—Dr. H. SNELLEN. *Test-Types, for the Determination of the Acuteness of Vision.* New edition. 8vo. Printed by P. W. Van de Weijer, Utrecht, 1866.

IN our number for October, 1863, we noticed the first edition of this work, and pointed out its great utility to the ophthalmic surgeon for testing the degree of vision possessed by patients as well as for detecting the various anomalies of that sense.

The present edition is partly rewritten, and has many additions.

The test-types are printed in five different languages, viz.: English, French, Spanish, German, and Dutch; and to test vision in those who cannot read, various figures whose form can be promptly stated are added. Among the latter we find a circle and square, which in our notice we stated to be desirable for the purpose of enabling us the better to detect astigmatism. If to the circle had been attached a movable hand, corresponding to the diameter of that figure, which the patient could move, so as to indicate what appears to him to be the longest diameter of the circle, it would greatly assist the optician in arranging the plano-cylindrical lens for the correction of the defect.

Round dots of a certain diameter are also given; and likewise sets of dots black on white and white on black, variously arranged, for comparative experiments.

The profession are under great obligations to Dr. Snellen for this extremely useful volume, a copy of which should be on the table of every practitioner.

ART. XXXVIII.—*The Restorative Treatment of Pneumonia.* By JOHN HUGHES BENNETT, M. D., F. R. S. E., Professor of the Institutes of Medicine and Senior Professor of Clinical Medicine in the University of Edinburgh, &c. &c. &c. Third edition. 8vo. pp. 110. Edinburgh: Adam & Charles Black, 1866.

THIS memoir consists essentially of a table which appeared in the fourth edition of the author's "Principles and Practice of Medicine;" of an extension of the statistical facts and conclusions therein referred to; and a reply to the observations which several distinguished physicians have made on various points involved in the inquiry. It has been issued with a view of bringing more prominently and more generally under the notice of the profession the great practical importance of the questions involved in the successful treatment of pneumonia by restoratives, and with the hope that its perusal will persuade hospital physicians and others to assist the author in collecting carefully-taken cases of acute pneumonia, tabulated in the same manner as his own, whereby the advantages of the practice may be either confirmed or negatived by experience.

We earnestly urge our readers to aid Professor Bennett by communicating to him the results of their experience, and thus contribute to definitely settling a long disputed and fundamental question in practical medicine.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Mechanism of Deglutition.*—Dr. KRISHABEN has instituted a number of auto-laryngoscopic experiments for the purpose of ascertaining the mechanism of deglutition, and states (*Comptes Rendus*, July, 1865) that in the act of deglutition the alimentary bolus passes along one of the pharyngeal channels on either side of the epiglottis, which last is raised by the elevation of the larynx; the bolus, consequently, enters the œsophagus at the moment when, by the contraction of the constrictor muscles, the pharynx is diminished in size, and is brought up against the bolus. The deglutition of liquids is effected in the same way, except that these pass pretty frequently over the epiglottis itself, which rarely occurs with solid aliments. A small quantity of fluid, when liquids are drunk, enters the larynx around the margin of the epiglottis and may even creep down to and moisten the vocal cords. In the act of gargling, the larynx is widely open, and a large quantity of fluid passes into the interior of the vocal organ.

It is easy to bear with the presence of an alimentary bolus in the respiratory tract, *i. e.*, in the larynx, even on the vocal cords, and in the interior of the trachea. The sensibility of the trachea to the contact of foreign bodies is infinitely less than that of the larynx. The contact of hard and cold bodies with the mucous membrane of the larynx cannot be tolerated; but the contact of soft and moist bodies, of the same temperature as the body, can be sustained for several minutes without occasioning any cough, or other inconvenience. For the performance of these experiments but little practice is required.—*Brit. and For. Med.-Chir. Rev.*, April, 1866.

2. *Transmission of Impressions through the Spinal Cord.*—Dr. BROWN-SÉQUARD maintains that in man after an injury damaging the whole transverse thickness of a small portion of one lateral half of the cord there may be observed—A. On the same side. 1. Paralysis of voluntary motion. 2. Hyperæsthesia of sense of contact, for pain, and for temperature in the paralyzed part. 3. An anæsthetic zone of small extent, corresponding to the parts supplied by nerves which take their origin from that part of the spinal cord situated immediately below the lesion. 4. Hyperæsthesia, in a greater or less extent of surface, above the zone of diminished sensibility. 5. Absolute or relative elevation of temperature in the paralyzed parts, and often also in those parts of which the sensibility is exalted, but not in the parts which are not paralyzed. 6. Phenomena indicating paralysis of the origins of the great sympathetic nerve in the neck, when the lesion has occurred in the cervico-brachial enlargement. B. On the opposite side. 1. Complete anæsthesia as regards contact, tickling, pain, and temperature, in those parts which correspond to the

ones that are paralyzed on the opposite side. 2. Perfect preservation of the voluntary movements, and of the muscular sense. 3. A zone of exalted sensibility of small extent, and feeble in degree, situated in the parts above those the sensibility of which is diminished.

In animals M. Brown-Séquard has also observed occasionally amaurosis, ulceration of cornea, hypertrophy of supra-renal capsule, epileptic convulsions, and general augmentation of the vital properties of both the muscles and nerves in the hyperæstheticized parts.

From these observations he considers himself justified in drawing the conclusion, that there is an absolutely complete decussation of the conductors of the various kinds of susceptibility, with the exception only of those conveying the muscular sense. Further clinical facts appear to demonstrate—1. That each of the four species of sensibility referred to above, possesses its own proper conductors which are distinct from those of the other kinds. 2. That each of these species of conductors occupies a distinct part of the spinal cord; and, lastly, that at the upper part of the cervical portion of the spinal cord the four species of conductors coming from the abdominal members and a great part of the trunk, form a group placed behind a similar group constituted by those proceeding from the thoracic members. For numerous cases, and much ingenious reasoning in support of these propositions, the reader is referred to the paper itself, which will well repay perusal.—*Ibid.*, from *Journal Physiol.*, Oct. 1863.

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3. *Relation existing between the Sense of Temperature, the Sense of Touch, and the Sense of Pain.*—The following interesting case of Dr. A. F. SPRING is almost unique, and affords a strong confirmation of the opinions of those who think the sensations of temperature, pain, and pressure are conveyed through separate channels, or are perceived by separate centres. The patient was a female, aged sixty, who had long suffered from hypertrophy of the heart, dyspnœa, and persistent bronchitis. From exposure to cold she became paralyzed, though without loss of consciousness or deviation of the tongue when that organ was protruded. The entire right half of the body, including the head, became insensible to temperature, and to pain, but there was no loss of motor power; the muscular power, in fact, as measured by the dynamometer, being somewhat increased on the affected side. She could feel the slightest touch on the anæsthesiated (?) side, and, when the eyes were closed, she could discover and pick up a pin from the floor. On washing the hands she could distinctly perceive the shock and movement of the water flowing over them, but was quite unable to distinguish whether it was hot or cold. In winter she could only perceive the temperature with the left half of the body, and the same when standing near a fire. The normal temperature of the skin on the affected side was maintained in every part, or differed only to the extent of 1° or 2°. Neither the pricks of needles nor strong pinching was perceived in the slightest degree. She suffered from neuralgia in the temporal region at night. In consultation with M. Schwann, the author ascertained that there was no diminution in the acuteness of the patient's perception in regard to impressions of weight and of contact. The hand lying prone on a table, and weighted with 500 grammes, readily distinguished the addition or removal of two or three grammes, and when weights were concealed in a cloth, and the amount estimated alternately by the two arms, no difference was remarked. From experiments made in the method suggested by Weber for determining the delicacy of touch by applying the points of compasses, it appeared that there was a considerable diminution of acuteness on the left, or healthy side, but a still more marked diminution on the right side. On the eighth day after this consultation the sensibility to pain returned, under the form of a painful formication, and from this time every object appeared *hot* to the patient, so that she was unable to distinguish ice from water at a temperature of 122°. This state lasted two months, when death occurred from an attack of apoplexy.

In this case the sense of variation of temperature, instead of being associated with tactile sensations, followed the same course as the sensations of pain, disappearing and reappearing, though modified with the latter. The muscular

sense was intact, and the sense of touch was only deteriorated in regard to its perception of distance. The cause of these abnormal conditions was evidently seated in the nervous centres.—*Ibid.*, from *Presse Médicale*, 1864, No. 34.

MATERIA MEDICA AND PHARMACY.

4. *Local Anæsthesia in a Case of Cæsarean Section, Ovariotomy, &c.*—Dr. B. W. Richardson relates (*Med. Times and Gaz.*, April 7, 1866) a case of Cæsarean section performed by Dr. Greenhalgh in which local anæsthesia was employed by Dr. R.'s method.

In this case Dr. R. states "local anæsthesia by the ether spray process offered everything that could be desired, and I think was in every sense preferable to general anæsthesia from chloroform or ether. Indeed, Dr. Greenhalgh's foresight in respect to these advantages is not less conspicuous than the skill and precision with which he performed the operation. I say this, not in any way to disparage chloroform in cases where it is really demanded, but as a matter of fact and experience. The advantages of the local method were these:—

"1. The operation was painless: the pain that was felt was the pain of labour, and that in the lightest and shortest degree.

"2. The patient, prior to operation, was disposed to vomit. Under chloroform she would almost certainly have vomited during the operation; the intestines would thus have been brought into the wound, and the operation would have been prolonged and made more serious. There might also have been after-vomiting. The tendency of the local anæsthesia was to check vomiting.

"3. The action of the cold checked hemorrhage. I do not think three ounces of blood were lost.

"4. The action of the cold in producing uterine contraction was in every sense beneficial.

"5. The patient was not subjected to shock. I have often, even in deep sleep from chloroform, seen symptoms of shock as the knife entered the flesh, and have felt the heart stop as sharply as though a blow had been inflicted on it. By the local anæsthesia the patient, in her full natural power, was subjected to no kind of cardiac embarrassment.

"6. The consciousness of the patient was an advantage to the operator. She never was restless, she never moved her body for a moment, and when she was once asked not to bear down with the diaphragm, she obeyed immediately.

"7. During the operation there was not the remotest anxiety that the patient would die from anæsthesia."

This process has also proved successful in ovariotomy. Mr. Spencer Wells operated on a woman who had an ovarian tumour so large that the heart and liver were pushed up to a level with the nipples, and the uterus (with the inverted vagina and part of bladder and rectum) down between her thighs. Thinking that chloroform might be dangerous in this state of heart and lungs, Mr. Wells rendered the integument insensible by the ether spray before making his first incision. Not the slightest pain was felt. A very large cyst was tapped and emptied. Some extensive adhesions then required to be separated, and a little chloroform was given, the operation being completed under its influence. If there had been no adhesion, the local anæsthesia would have been quite sufficient to render this great operation painless.

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5. *Local Anæsthesia.*—Dr. L. W. Sedgwick, who has witnessed most of Dr. Richardson's experiments with his new mode of producing local anæsthesia (see last number of this Journal, p. 512) gives (*Lancet*, April 14, 1866), the following comments:—

"When the spray is directed to any part at the proper distance, an inch and a half, much cold is felt, and, at the period of blanching, some prickling, which in some sensitive persons amounts even to a sharp pain. The more rapidly

whiteness is produced, the less unpleasant sensation there is; and if, from the impurity of the ether or any other cause, this symptom is delayed, much dull aching is felt. The tissues, when frozen, are hardish and cut brawnily. When the spray is removed they quickly, and in most cases painlessly, regain life. There is no sloughing, only a little redness, and very occasionally some œdematous swelling and prickling, remaining for a longer or shorter period. This rapidity of return to a normal state, as well as the rapidity of the freezing process, is clearly the great reason why there is no sloughing following this mode of producing local anæsthesia by cold. An instructive example of the great advantage this mode possesses over the ice process was shown in one of my experiments. I was trying if the interposition of a thin metallic plate would diminish the slight smarting felt often on the occurrence of the blanching. I used a leaf of tinfoil, laid dry on the arm at first, and then one gummed to it; and, not having sufficiently dried the latter, I found a layer of ice close to my skin. The redness resulting from the freezing through dry tinfoil passed off, as is usual, in a few hours; but the redness, pain, and swelling produced by the ice lasted, and troubled me for several days.

"After these general observations, I will now shortly summarize the results obtained in practice, and direct attention to some of the conclusions to be gathered from them; and for this purpose I am not only able to draw upon published cases and my own experience, but have also been kindly allowed to use Dr. Richardson's extensive observations.

"The most important operation yet performed has been ovariotomy, by Mr. Spencer Wells. Here the skin incision and the application of the clamp were painless, but the separation of adhesions was somewhat painful, as the spray was not applied fully to them. This is a most encouraging result: the most painful part of the operation, the skin incision, is fully under control; and further experience only can determine whether it is safe to freeze adhesions to important structures such as the diaphragm, liver, or intestines.

"Three cases of removal of the breast have occurred, of which two were quite successful, the other not so; but in this case, which happened to Dr. Richardson, a mechanical deficiency in the spray-producer and the great vascularity of structures combined to overpower the cold produced.

"Three cases of fistula have been operated on without pain; and one was painful, but only in those parts where the spray had not been applied. In a case of division of the sphincter ani and one of removal of a polypus of the rectum, perfect insensibility was produced; but in a second case of division of the sphincter the result was not satisfactory.

"Fatty tumours have been removed from over the false ribs and the shoulder, a doubtful scirrhus from the sole of the foot, and six sebaceous tumours from the face and head, without any pain.

"Three cases of amputation of the finger have been painless, and one somewhat painful. Supernumerary parts have been three times cut off from the digits with success. Three toenails have been removed. A carbuncle has been freely incised, and nitric acid twice applied to very sensitive parts with comfort. The operation for phimosis has not given pain, and ten deep abscesses and two whitlows have been cut into when frozen without the knowledge of the patient. One of the whitlows was in its early stage, very red, tense, and acutely painful; an incision of an inch long was made, and the next day it was almost well. Two cases of operations on the skin have been most successful, and several deep sinuses have been opened without pain; in one case in which I applied the spray there was some unpleasant sensation from the structures not being sufficiently frozen. A case of excision of the eyeball by Mr. Ernest Hart has been reported, where the pain was to a great extent alleviated. And lastly, some two hundred teeth have been extracted without pain in by far the larger number. In one case Dr. Richardson produced a most satisfactory degree of numbness in the removal of a wisdom tooth by freezing the adjoining structures from the outside.

"Considering that these details include the earliest operations, the results must be considered most satisfactory; and from the progress that has already been made, it cannot be doubted that as a wider knowledge of the details of the process and a further experience of its application are gained, the cases of non-

success will be greatly diminished, and perhaps a new fluid acting more quickly may reduce or prevent altogether the unpleasant, and in some persons sharply painful, sensation produced during blanching. I have not seen or heard of any material interference with the healing process, except in one case where some sloughing occurred; but as the wound had to be opened the next day to stop bleeding, it is at least doubtful to what cause the mischief was due.

"But medicine gains as well as surgery. One case of lumbago, and one of rheumatism of the shoulder, have been instantly relieved by this process; and four cases of neuralgia have been for the present cured. Even whilst writing this, I have applied the spray to the forehead in a case of neuralgic headache, and to the sacral region for a similar pain there, with marked advantage. Hence, without in the least degree claiming for the process the character of a universal panacea for superficial pain, I look with hope to the prospect of wide use in many troublesome disorders which, to cover our ignorance, we call neuralgic; and also in such brain affections, especially in children, where rapid and extreme cold is desired.

"But I will refrain from speculations, and briefly mention a few suggestions which lie on the surface of the question. If the operation is not very superficial, the part should be well frozen, and it should be white for a minute or more before any incision is made. The surgeon should cut slowly, and the spray should be kept going immediately before the knife. He should remember the difference between frozen and normal parts, and work accordingly. And, lastly, if the operation be lengthened, cold water should be used to delay slightly the recovery.

"The more one sees of Dr. Richardson's most important discovery, the more one learns the necessity of attention to such minutiæ as the perfectness of the tubes, the purity of the ether, and the accommodation to differing circumstances; and the more one feels that the invention contains within it the power of a yet larger growth, and that its author deserves the lasting gratitude of the profession and those whose miseries we try to alleviate.

"P. S. Since the above was written, I have had the gratification of seeing the complete success of ether spray in Dr. Greenhalgh's important operation of Cæsarean section. Many other operations have been painlessly done, and I have used it with marked success in a case of spinal hyperæsthesia, and one of lumbago. On the other hand, some failures are said to have happened, some of which have been clearly attributable to the imperfection of the apparatus employed, and others, it may be, to the unfitness of the cases for the use of narcotism by cold. Widely applicable as this mode of producing painlessness is, it needs, as usual, two conditions for its success: a perfectness of the mechanism employed and a fit selection of cases."

6. *Antagonism of Chloroform and Ether.*—Dr. Greenhalgh stated at the meeting of the Obstetrical Society of London (Feb. 7, 1866), that some time since he had requested Dr. Sansom to administer chloroform to a lady during the removal of a large polypus from the uterus. She was extremely anæmic and feeble, from large and frequent losses of blood occurring over a period of two years and a half. She had a damaged heart, and a profuse sanious and offensive discharge from the vagina. Shortly after the administration of the chloroform, and before complete anæsthesia was induced, her pulse began to falter, her breathing became embarrassed, and her countenance livid. Dr. Sansom, without delaying the inhalation, substituted ether with the best results. Dr. Greenhalgh begged to ask that gentleman if he had adopted a similar practice in other cases with good effects; and if so, whether he considered that the vapour of ether could be regarded as an antidote to the evil consequences of chloroform, and whether he could offer any physiological explanation of how such beneficial effects are brought about.

Dr. Sansom replied that it was his constant practice to administer ether if in any case chloroform seemed to produce a depressing effect. Indeed usually, in prolonged operations, he thus maintained the anæsthesia. The substitution, or rather addition, was never attended by any return of sensation. He always found that the plan answered admirably: it certainly restored the force of the

circulation. It was perhaps premature to explain the *rationale* of the procedure; but he would remark on the singular circumstance that whereas chloroform tended to empty the blood-corpuscles, ether tended to distend them—chloroform reddened the blood, and ether darkened it. There thus existed, as it were, a natural antagonism amongst agents of the anæsthetic class. Again, they influenced differently the sympathetic system. Ether would cause contraction of the heart and arteries even during the period of the influence of chloroform, and the bichloride of carbon did the same in a marked degree.—*Med. Times and Gaz.*, March 24, 1866.

7. *Anæsthetic Properties of the Bichloride of Carbon.*—Dr. SANSOM, in a paper read before the Obstetrical Society of London (Feb. 7, 1866), expressed the opinion that this new anæsthetic would be of great value to the practitioners of obstetrics. Very much as to its constitution and properties had yet to be determined, and more could not be attempted at present than the presenting to the Society a few scattered hints and observations. Dr. Sansom claimed to be the first to describe this body as an anæsthetic in his book on Chloroform, published in May, 1865. It was then called tetrachloride of carbon; it has since been determined to be a bichloride, and Sir James Simpson has suggested for it the convenient term chlorocarbon. The fluid possesses many of the characteristics of chloroform; its odour, however, is more pleasant and less pungent; its density is slightly greater, and its volatility less. It takes a longer time to induce anæsthesia. On the fourth of July, 1864, the author, in conjunction with Dr. John Harley, tried the effect of the inhalation of the new anæsthetic upon a frog. The circulation in the web of the foot was observed by the microscope throughout the process. It was seen to cause a considerable amount of irregular muscular action, and a very decided contraction of the capillary arteries. A state of torpor was then induced for three-quarters of an hour, but reflex action was not wholly abolished. Experiments were made upon dogs and guinea-pigs. In these there was considerable muscular agitation at the outset. Deep anæsthesia was slowly produced, but, once induced, continued very profound until death. The post-mortem signs were, complete collapse of the lungs and distension of the right side of the heart, so that the organ assumed a globular form. The sensations produced by the inhalation of the bichloride of carbon are at first very agreeable: there is a pleasant sensation of warmth, and, as the author thought, a freedom from the vertigo such as is produced by chloroform. Dr. Sansom has employed it in cases of midwifery. It was readily inhaled: it mitigated the pains, and in one case almost completely abolished them; it did not interfere with consciousness. In reviewing the relative merits of the two anæsthics, the author considered (1) that chlorocarbon has the advantage over chloroform in its being inhaled with greater comfort; it is not susceptible of decomposition with the formation of deleterious chlorine compounds; and its cost will probably be considerably less. Being much less volatile, than chloroform, it will probably be best administered by pouring it upon a sponge wrung out in hot water. (2) It is, during its early stage of action, a powerful stimulant to the circulatory system. It will probably be especially valuable in midwifery, for it abolishes pain without affecting consciousness, and its tendency is certainly to increase muscular action. (3) It is not advisible to induce deep narcotism by means of this agent. Its profound effects are very persistent, and it is eliminated from the system slowly.—*Med. Times and Gaz.*, March 24th, 1866.

8. *Hæmostatic Ethers.*—Dr. B. W. RICHARDSON has invented some hæmostatic ethers which may prove very useful in practice. By the ether spray he was struck with the effect of the cold in immediately stopping the flow of the blood, but he observed that when reaction returns the bleeding recurs, which, if the wound be closed too quickly, will be the cause of after trouble; hence he was led to believe that if the effects of the cold could be supplemented by a styptic which would spray evenly with ether the constringing action would be rendered more perfect. With this view, he requested Mr. Robins to make for him a solution consisting of absolute ether, having a boiling point of 92°

Fah., charged to saturation at a low temperature with tannin, and afterwards treated with xyloidine a little short of saturation. This compound runs easily through the spray tube without blocking, produces good local anæsthesia, and possesses an agreeable odour. Dr. R. names this *Xylo-Styptic Ether Spray*. "When this spray," Dr. Richardson states, "is directed on an open bleeding living surface, the primary effects are those produced by the cold—namely, the condensation and whitening of the tissues. If blood be flowing, it solidifies, and when the parts relax, new blood that may ooze up enters the solid blood as though it were a sponge, quickly solidifying by coagulation and stopping further flow.

"The applicability of this process for the arrest of hemorrhage will occur to the mind of every practitioner. The substances used in the compound are innocuous, and the combined influence of the cold and the styptic are immediate, and so decisive that I can scarcely imagine any hemorrhage they would not control. I have not had an opportunity of testing the point, but I have no doubt from the influence of the styptic on the decomposing albumen of defibrinated blood that even in those cases of hemorrhage where the blood is preternaturally fluid, the styptic spray would arrest the hemorrhage entirely. Where the blood contains fibrin in a natural condition, I cannot imagine a case in which the fluid would not prevent exudation.

"The essential elements of this process are three in number:—

"1. The immediate constringent effects of cold on the bloodvessels.

"2. The chemical action of the solution on the fibrin and albumen of the blood.

"The extreme mechanical fineness of distribution of the fluid on the bleeding surface.

"The styptic ether cannot only be applied to open wounds on the skin, but to hemorrhage after the extraction of teeth, and, by means of a uterine tube, to hemorrhage arising from cancerous disease of the uterus or other cause. It might also be applied to the rectum in cases of hemorrhage from piles.

"The apparatus required for this styptic ether is mechanically the same as for ordinary ether—that is to say, my spray tube with Dr. Clarke's hand bellows. The tube, however, requires to be made of different metal from that ordinarily in use for local anæsthesia; and I have therefore instructed Messrs. Krohne and Sesemann to construct a special tube for the purpose."

"This styptic ether," Dr. R. says, "will keep ready for use any length of time, as there is nothing in it to undergo decomposition; and, as very small quantities of it are required, it will become, I trust, of standard service to the medical practitioner. It would be of great use also to surgeons on board ship, and particularly to army surgeons. In case of warfare it would be exceeding useful on the battle-field, as, under the instruction of the surgeon, it could be used by an orderly, so as to prevent hemorrhage instantaneously in the case of flesh wounds. It would also form a useful addition to the medical cabinet of travellers, who by necessity are removed from the direct succour afforded by medical art."

Dr. R. has also tried experiments with solutions of salts of iron in ether, but he has not found them more effective than the preceding preparation, and they rapidly destroy the tube. Dr. R. has also invented some other ether compounds, of which he promises an account hereafter.—*Med. Times and Gaz.*, April 28, 1866.

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9. *Iodized Cotton.*—Dr. Robert Greenhalgh gives (*Lancet*, May 26th) the following as the mode of preparing this article:—

"Two ounces of iodide of potassium and one ounce of iodine are dissolved in eight ounces of glycerine, in which solution eight ounces of cotton wool are thoroughly saturated and then carefully dried. The best method of applying it is to take a portion of the iodized cotton about the size of a half-crown piece secured by some silk thread tied crosswise, and, passing it through a speculum, to press it firmly against the cervix uteri, over which a piece of cotton wool similarly secured, somewhat larger, and freely saturated in glycerine, should be placed and retained *in situ* while the speculum is being withdrawn. It may be

applied twice or three times a week, and be kept in the upper part of the vagina from twenty-four to forty-eight hours."

Dr. G. states that the cases in which he has found this application most useful are, subinvolution with or without congestion or induration of tissue; in cases of chronic inflammatory enlargements and thickenings of the cervix uteri; in one case of pruritus, apparently due to acrid secretion passing through the os uteri; in two cases of fibroid disease of the anterior lip of the uterus; in chronic pelvic cellulitis; in hæmatocele; and in one case of epithelial cancer of the neck of the uterus.

It possesses the following advantages: It is clean, light, and portable; it produces no irritation; destroys all fetor; is considerably stronger than the compound tincture of iodine, is more readily absorbed, and can be kept in contact with the diseased tissues for a longer period. Moreover, it does not soil the linen like the medicated pessaries and suppositories and many other topical applications in general use for uterine affections.

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10. *Chlorate of Quinia.*—From the powerful oxidizing and general stimulating agency of chloric acid, and the influence of quinia as a nervine-tonic, Dr. LYONS has been led to the idea of combining these two remedial agents with the view of obtaining a febrifuge medicine of great potency. Each atom of the chlorate will provide, it may be expected, five available atoms of oxygen from the chloric acid, chl. O_5, while in the perchloric acid, each atom contains seven of oxygen, chl. O_7.

From some half-dozen cases in which he has as yet employed this drug, including scarlatina, typhus, the diphtheritic case above mentioned, and low forms of pneumonia, Dr. Lyons has obtained results which so far satisfy him of its efficiency and utility, and he invites the co-operation of his professional brethren in testing the value of this salt of quinia in low pyrexial states.—*Dublin Med. Press and Circular*, May 30, 1866.

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11. *Action of Medicinal Preparations of Iron on the Teeth.*—Dr. JOHN SMITH, with a view of ascertaining how far the popular belief that the preparations of iron in medicinal use exert an injurious influence on the teeth, instituted a number of experiments.

"Eight of the compounds of iron in most general use as remedial agents, and along with them one or two other non-ferruginous compounds, sometimes suspected of injuring the teeth, were selected, and in solutions of these compounds the same *number* and the same *kinds* of human teeth were immersed. In each of the separate solutions four teeth were placed; and in all cases these four teeth consisted of a sound canine and bicuspid, and a decayed upper and lower molar. * * *

"On examining the respective solutions after twenty-four hours, the teeth were found unaltered in those of the carbonate and saccharine carbonate of iron, the phosphate of iron, the iodide of iron, the citrate of quinine and iron, and in that of the sulphate of quinine. In the solution of the vinum ferri, the liquid itself was somewhat turbid, the teeth, however, seeming to be untouched. In that of the muriate of iron, a turbid sediment filled the bottom of the bottle, and covered up the teeth from view; the fangs of the teeth were somewhat soft and flexible, and the enamel easily scraped down. The sediment under the microscope presented an amorphous granular appearance. In that of the phosphoric acid they seemed somewhat flexible at their more slender parts, such as the points of the fangs; and the enamel looked opaque and chalky, but did not feel crumbling or soft. In the solution of Condy's fluid they were deeply stained, but in no way altered in texture.

"The teeth in the different solutions were allowed to remain ten days longer, and on examining them at the end of that period neither those in carbonate or saccharine carbonate of iron, the phosphate of iron, the iodide of iron, nor the citrate of iron and quinine, presented any further change, except that those in the saccharine carbonate were slightly blackened, the discoloration, however, being superficial, and nearly all removable by brushing. A ropy sediment adhered to those in the sulphate of quinine, and perhaps a very slight softening

of the surface of the fang might be present. The ropy sediment presented, under the microscope, the appearance of a mass of acicular crystals of various sizes, interspersed with threads or fibres of some kinds.

"In the solutions of the vinum ferri, the sulphate of iron, the muriate of iron, the phosphoric acid, and of Condy's fluid, certain changes were observable. In the vinum ferri the cloudy precipitate was somewhat increased, and the teeth were dark and discoloured, especially in the fangs, but otherwise uninjured. In the sulphate of iron solution a very copious precipitate had formed. The teeth were not softened throughout their whole thickness, but had a layer of soft substance covering in what of the enamel and dentine remained hard beneath. They were also considerably discoloured. In the solution of the muriate of iron, a large deposit of the cloudy precipitate had accumulated, and in this the teeth lay buried. Their fangs were very soft, and quite flexible, and the enamel was wasted away, and on being touched crumbled down like chalk. In those, again, immersed in the phosphoric acid solution the fangs were quite flexible, and were diminished in bulk; the enamel could be deeply scratched with any blunt instrument, and felt like Derbyshire spar. It was more wasted, but not so soft as that of the teeth in the muriate of iron solution. Notwithstanding this loss of salts of lime, on drying by exposure to the air these teeth have again become hard and unyielding. In the Condy's solution, the teeth were covered by a very dark incrustation, which, however, could be nearly all removed by brushing, or still more effectually by applying dilute muriatic acid; otherwise they were uninjured. The solution itself had become almost colourless.

"From these facts it would appear that certain preparations of iron, when directly applied, do exercise a powerful effect on the substance of the teeth. And the ratio of the effects obtained would seem to prove, that of all the preparations employed in these experiments that of the tincture of the muriate of iron acts most powerfully, the sulphate of iron next, and next to that again, although in comparison very immaterially, the vinum ferri, the other preparations of iron appearing to be inert.

"Of the other substances experimented with, phosphoric acid seems the only one producing injurious effects on the teeth, which it does, however, to a very marked extent."—*Edinburgh Med. Journ.*, Jan. 1866.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

12. *Acute Uncomplicated Myocarditis in which the Disease was Diagnosticated During Life.*—This case was communicated to the Royal Medical and Chirurgical Society, by Dr. C. B. Radcliffe. It is an example of a grave affection, of which there is little, if any certain knowledge—acute uncomplicated myocarditis—or, in other words acute inflammation of the muscular structure of the heart, without any inflammation of the endocardium or pericardium. The patient was a fine, stout, strong, married man, middle aged, a varnish maker by occupation. For six weeks he had had occasional attacks of sharp pain at the pit of the stomach, and shooting thence into the left arm—attacks evidently of the nature of angina pectoris. In other respects he thought himself well in health, and he was well enough to follow his daily work, and to get about with little or no discomfort up to the day before his death. When seen for the first time (July 27, 1865), the indications of the disorder evidently pointed to a very weak heart. The pulse was extremely feeble, and somewhat slow, but not irregular. The hands were cold and clammy—remarkably so. The first sound of the heart was absent. The cardiac impulse against the walls of the chest could not be felt. The second sound of the heart could be heard; but faintly only, and several times (in an examination extending over several minutes) it was distinctly reduplicated. There were no morbid sounds of any kind whatever. In the attempt to detect the cardiac impulse the patient winced more

than once, and complained of feeling sore and tender at the part. There was no arcus senilis; the arteries were to all appearance free from atheromatous deposits, and, in short, the only indications of physical disorder were those which have been mentioned. The first attack of pain happened at a time of sudden and severe mental trouble. Previous to this the health had been in all respects excellent. The patient was seen for the second time on the following day, and then he was dying. He was sitting awkwardly on the edge of a chair by the side of the bed, supported by his wife. On suggesting that his posture was a very uncomfortable one, he gasped out, "I must keep as I am—I dare not stir." He had been in this position for ten or twelve hours, literally without moving in the least. His face was pale and ghastly; large beads of sweat stood out on the forehead and went trickling down the face; his extremities, upper and lower, were clammy, and corpse-like as to paleness and coldness. The pulse at the wrist had failed altogether. His breathing was short, shallow, and gasping, and with it was a rattle of which the significance could not be mistaken. His mind was clear and collected; he complained of sickness, and said he knew that he was dying. The history given of this sudden change was this—that he got out of bed to pass urine in the middle of the night, after several hours' quiet sleep; and that while up for this purpose the pain at the pit of the stomach returned in an unusually severe form, with cold perspirations, and with a feeling of deadly faintness. For the next four hours this pain continued without intermission, even without alleviation, and then it ceased suddenly, and the condition as suddenly changed to that which has been described. The post-mortem examination was made by Dr. Willis and Dr. Bazire twenty-four hours after death. In the cavity of the pericardium were nearly two ounces of serum, reddened by blood, but having no flakes of lymph in suspension. The pericardium itself presented no traces of inflammation, old or new; its visceral layer was intensely injected with ramifying capillaries filled with dark blood, but without ecchymoses, and elsewhere it was of the natural colour and character. The heart was dilated and flabby. The muscular structure of both ventricles, and in a lesser degree of both auricles also, was soft and friable, of a mulberry-juice colour, almost black in fact, contrasting in this respect in a very marked manner with the natural redness of the muscles of the chest walls. It broke down readily under the finger like hepatized lung. As seen with the naked eye, it did not appear to be fatty, but there were considerable deposits of fat about the exterior of the heart. The endocardium and all the valves were quite healthy, and so also was the aorta. The left ventricle contained some loose very dark clots of semi-coagulated blood; and in the right ventricle were some fibrinous, but not decolorized, clots adherent to the walls. Upon lifting up the heart by a portion of the right ventricle, the muscular structure broke down and tore like wet paper by the weight of the heart itself. Unfortunately, no microscopic examination was practicable. The grounds upon which the diagnosis was made were in the main these: The history of the disease seemed to point to acute rather than to chronic disease, to begin suddenly in a way which suggested the idea of a "broken heart." There was no sufficient reason to suspect pericarditis or endocarditis, for there were none of the morbid sounds which mark the presence of these inflammations. So far seemed plain enough. It seemed, moreover, that the main symptoms were easily explainable on the supposition that the muscular structure of the heart had been attacked by inflammation. Inflammation of the muscular structure of the heart, as a matter of course, would weaken the muscular powers of the structure, and this weakening would account for that failure in the action of the heart which was the most prominent symptom. Moreover, the same weakening would carry along with it, if sufficient in degree, absence of the first cardiac sound, and absence likewise of the usual cardiac impulse. Nay, it seemed as if the symptoms present—sudden failure in the action of the heart, with loss of its first sound and of the impulse at the apex, with some tenderness on pressure in the intercostal spaces in the cardiac region, with some pain, but without the severe pain of pericarditis, without the morbid sounds of pericarditis or endocarditis, and without arcus senilis atheromatous vessels or other signs, good or bad, to point to common fatty heart—were all the symptoms and signs one had a right to expect in

inflammation of the muscular structure of the heart. At any rate, it was on these grounds, be they sufficient or insufficient, that the diagnosis was made; and it was this diagnosis which led to the post-mortem examination, for if it had not been so, the body—such was the opposition of the friends—would have gone to the grave unexamined.—*Med. Times and Gaz.*, Feb. 3, 1866.

13. *Fatty Liver in Children.*—In the *post-mortem* examinations of 222 children affected with adipose infiltration or with fatty degeneration of the liver, Drs. STEINER and NEUREUTTER found that in 131 the age was from one to four years. Among the pathological conditions in the course of which fatty liver appears, the most frequent is tuberculosis; and the fact that this state in children is most frequently manifested as disease of the lymphatic glands and not of the lungs, negatives the supposition that the excessive deposit of fatty matter in the liver in connection with tuberculosis is due to deficient oxidation of hydrocarbons. Drs. Steiner and Neureutter consider rather—and in this they agree to some extent with Frerichs—that the origin of fatty liver is to be sought rather in the change in the constitution of the blood induced by the tuberculous disease, and that the liver may be fatty from the commencement of the tuberculous process. Next in order to tuberculosis in connection with fatty liver, is enteritis; which is not, however, to be regarded always as a cause. It may be preceded by the fatty disease; or, in many cases, the two diseases are very probably due to a common cause. The exanthemata may also be followed by fatty liver; and the connection between these is only to be found in the changes of blood. Fatty liver is also observed in connection with diseases of the bones in children, such as tuberculous caries and rickets. It is an error to ascribe the condition of the liver to the use of cod-liver oil in such cases; inasmuch as it is met with in children who have never taken oil, in as advanced a state as in those who have used oil for a year. Cases also of bronchitis, pneumonia, pleuropneumonia, and heart disease, sometimes occur in which fatty deposit in the liver is met with. Of the causes indirectly affecting the liver, diet holds a principal place; inasmuch as the children have either a diet very rich in fat, or (especially among the poor) one deficient in fat but rich in hydrocarbons; and the mischievous influence of this diet is increased by the deficient metamorphoses resulting from want of exercise and from impure air. The authors draw a distinction between adipose infiltration and true fatty degeneration; and observes that the former condition appears to be more frequent in children than the latter, inasmuch as it was met with in 188 cases out of the 222 examined. They hence conclude, that in by far the greater number of cases fatty liver is not to be regarded as a result of malnutrition of the hepatic cells, but as the result of causes acting from without.—*Brit. Med. Journ.*, Feb. 10, 1866, from *Wiener Medizin. Wochenschr.*, Dec. 6, 1865.

14. *Inoculability of Tuberculosis.*—M. VILLEMIN says that tuberculosis is the effect of a specific cause, a virus; which, like its congeners, may be propagated in the morbid products to the formation of which it leads by its direct action on the normal elements of the affected tissues. M. Villemin states further that he has established by experiment the fact that this virus, when introduced into a susceptible body, may reproduce itself, and at the same time reproduce the disease of which it is the essential principle.

On March 6, M. Villemin placed two young rabbits, about three weeks old, in a cage; and inserted behind the ear of one of them two small fragments of tubercle and some puriform fluid taken from a cavern in a man who had died of phthisis thirty-three hours previously. On March 30 and April 4, tubercle was again inoculated. At each operation, local symptoms were produced. On June 20, both rabbits were killed. In the animal which had been inoculated, tubercle was found scattered along the greater curvature of the stomach; there were also tuberculous deposits in the small intestine and in the kidneys; and the lungs were full of large tuberculous masses. The other rabbits, which had not been inoculated, but had in other respects been subjected to the same conditions, presented no signs of tubercle.

On July 15, three healthy rabbits, living in an airy situation and supplied with

abundant and varied food, were inoculated with tubercle. The operation was repeated on them on July 22, and at the same time another healthy rabbit, living with the others in the same conditions, was inoculated. In the middle of September, the animals were killed. In one, there were abundant patches of tubercle of the size of a lentil, projecting on the surface of the lungs; and some miliary granulations. In a second and third, there were similar appearances; and one animal had yellowish-white tubercles in the ileo-cæcal appendix. In the fourth rabbit (the last which had been inoculated) there were, chiefly in the left lung, tubercular deposits of the size of a pea, projecting on the surface. There was also a large number of granulations surrounded by a reddish areola of congestion; several tubercles were in the peritoneal covering of the liver and in the upper portion of the small intestine. While these experiments were being carried on, two other rabbits living in precisely the same conditions as those which were inoculated, were killed for other purposes, and presented no trace of tubercle. A third rabbit, whose sciatic nerve was divided on July 14, was killed on November 21. There had been prolonged suppuration, with swelling of the tibio-tarsal joint with caries of the os calcis; and the animal had become extremely thin; but there was no tubercle.

In a third series of experiments, commenced on October 2, M. Villemin procured three pairs of rabbits about three months old. Each pair was from the same litter, and from a separate mother. One animal of each pair was inoculated, and each pair was placed in a compartment of a cage. A large vigorous adult rabbit was also inoculated. On November 23, the inoculated rabbit of one pair was found dead. The posterior part of both lungs was congested; and in the congested tissue, principally under the pleura, were very small grayish granulations. The cortical substance of the kidneys contained a large number of cysts filled with transparent fluid. In the other two pairs, killed on November 29, the inoculated rabbits both presented tubercles beneath the pleura; the three rabbits which had not been inoculated presented no trace of tubercle. In the large adult rabbit, both lungs were covered with subpleural granulations, the smallest of which were surrounded by areolæ of congestion. There were two or three tubercles projecting on the surface; and the tissue of the lungs contained granulations. Tubercle was also found on the surface and in the tissue of the spleen.

From these experiments, M. Villemin arrives at the following conclusions: 1. Tuberculosis is a specific disease. 2. Its cause lies in an inoculable agent. 3. Tubercle is readily inoculable from man to the rabbit. 4. Tuberculosis belongs to the class of toxæmic diseases.—*Brit. Med. Journ.*, March 17, 1866, from *Gazette Médicale de Paris*, December 16, 1865.

M. Hérard has repeated the experiments of M. Villemin, and confirms the statement that tubercle may be inoculated from man into the rabbit.

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15. *Sympathy between the Ear and Larynx.*—Dr. C. Fox draws attention to the sympathy existing between the auditory canal and the larynx. He sums up a very elaborate paper as follows:—

"1. The sympathy between the ear and the larynx, as well as the stomach, has been long known, although the majority of recent writers seem to have overlooked it.

"2. This sympathy is not manifested in every individual, but in about seventeen per cent., and seems to depend on a state of hyperæsthesia of the nerve which supplies the auditory canal.

"3. The nerve of the ear concerned in the production of this phenomenon cannot be a branch of the vagus, as Romberg and Toynbee have affirmed, but is in all probability a branch of the fifth cranial nerve.

"4. This sympathy is an example of a reflected or sympathetic sensation, in which the connection between the nerves concerned takes place in the nervous centre.

"5. Cases occasionally occur where a cough is solely dependent on the existence of some source of irritation in the auditory canal.

"6. The explanation of the sympathy between the ear and the larynx enables

us to understand the mode in which pain of the ear becomes occasionally a symptom of a thoracic aneurism.

"One of my chief objects in bringing before the notice of my professional brethren this sympathetic connection is to introduce to them what may be called an *ear-cough*, and to strongly advise them to examine the auditory canals in all cases of obstinate cough, where none of the more frequent causes of this symptom can be discovered."

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16. *Cruveilhier's Paralysis.*—Dr. Fleming brought under notice of the Surgical Society of Ireland (April 20th, 1866), a man affected with this disease. He thought it would be admitted that this was a case showing in a very marked manner that peculiar class of muscular atrophy, which was comparatively rare, as the result of injury. This poor man was a sailor from the age of twelve years. In the year 1864, when engaged on board ship and employed aloft, he by some means lost his hold and fell down some sixteen or eighteen feet on the deck. The fall was partly broken by the rigging, but he was seriously injured at the time. He was stunned and remained insensible for some hours after the accident, and was attacked with a peculiar distressing sensation in the neck, extending along the spine and each upper extremity. Notwithstanding this, after two or three days he recovered sufficiently to go through some of his duty, and he continued to perform his work, but under most aggravated sufferings, the pain being referred to the localities he had mentioned. Between two or three months afterwards he found from day to day that he was losing the power of his upper extremities, particularly about the shoulders, and it was remarkable that the deficiency in that power commenced in the upper arm and ultimately seized the lower and forearm, so that although he had to a certain extent lost the power of the upper arm, he was yet able to hold with a certain amount of control objects with his hand. The disease progressed, and the muscles became atrophied to such an extent that some were reduced to perfect bands; some were hardly traceable, even under the electro-magnetic current. The man was able to walk about, and able to support to a certain extent his head, but occasionally the head fell down on the thorax. In addition to the loss of power in the upper extremities, he might mention that sensation was peculiarly acute in some situations. In all it existed, but in some there was hyperæsthesia. This man was in the hospital at Carlisle, and was for a length of time under the care of Sir James Simpson, at Edinburgh, and in London under the care of Sir William Fergusson. [This man was then undressed and examined by the members.] Dr. Fleming observed upon the well-marked effect of this disease which the man exhibited. There was little more than a capsule of skin thrown over the bones without any development of muscle. The respiration was probably diaphragmatic. He particularly directed attention to the back part of the spinal column. It was rather improved since his admission to hospital. Then he could not bear the slightest touch, but now he was much less sensitive. The man was particularly accurate as to the history of his case; his intellect was perfect in every respect. He swallowed well. He could not bend or raise his arm, and when asked to shake hands did so by swaying his body round. When he came into hospital he could not bear to be touched in the right scapular region, but now he was much improved, and his head was held better up. The treatment in Edinburgh was electricity, which he liked and which he thought did him good, and he used strychnine also. His principal annoyance was a difficulty in respiration which he experienced in the morning. Occasionally there was some little interruption to the free function of the bladder and some slight attempt at incontinence of urine. He had examined the urine and found it normal in quantity and in quality.—*Medical Press and Circular*, May 9, 1866.

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17. *The Sense of Smell Applied to Diagnosis.*—Dr. Henry Johnson, in a paper read before the Shropshire branch of the British Medical Association (Nov. 3, 1865), expresses the opinion that the proper cultivation or education of the sense of smell would afford valuable diagnostic signs.

"A case," he says, "which occurred more than twenty years ago first directed my attention to this subject. A publican had a very loud, frequent, and pecu-

liar cough, with expectoration; and yet I could not detect satisfactory proofs of bronchitis, pneumonia, or tubercular disease. The odour of the sputa was not only most disagreeable, but quite peculiar, and unlike anything that I had smelt before. This expectoration was evidently purulent; and I thought that it came from an abscess of the liver, which had penetrated through the diaphragm and worked its way through the lungs. According to Dr. Budd, the matter of an hepatic abscess, when in contact with the lung (from admission of air), *is sometimes very fetid.* (See Budd *On Diseases of the Liver.*)

"The occurrence of this case, and the impression made upon me by the peculiar, disgusting odour of the sputa in this instance, enabled me to take a correct and a more hopeful view of another case which occurred some years later.

"Mrs H. had been long ailing with disordered digestion and derangement of the liver. There was also a good deal of pain and tenderness in the hepatic region, and even enlargement of the right hypochondrium. Poultices had been applied for some time to this part; and ultimately it became prominent. An abscess formed, and was opened by an incision. Matter escaped; but it had such an intolerable smell, that I believe my colleague at first feared that he had opened a fecal abscess. But the smell, though very disagreeable, was not *fecal.* It was so exactly like what I had noticed in the above mentioned case, that I ventured to give the more hopeful opinion that we had to do with an hepatic abscess; which proved true and the case did quite well.

"I went to see a patient with Mr. Keate. I do not think that any intimation had been given to me of the nature of the case; but I do know that the peculiar smell, which I perceived distinctly before an examination was made, convinced me that there was a cancer; and the examination of the uterus told me where it was.

"The odour of the breath is very peculiar in cases of albuminuria. One does not in all cases percieve this, but I have very frequently done so; and, when it is detected, it may literally put us upon the scent in the right direction, and chemical tests may afterwards confirm or refute our suspicions. The cause of this peculiar odour is said to be the presence of ammonia derived from the decomposition of urea in the lungs.

"Every one knows that the breath has a very peculiar sweet smell in diabetes. It is sometimes very disagreeable.

"I have also often noted a peculiar heavy smell in the breath when the bowels are loaded or deranged. I have thought it an indication of a sluggish liver; and this little hint has often led me to prescribe in the right direction.

"I do not pretend or desire, in this brief paper, to mention every state of the system in which some peculiar odour is perceptible; but in reading Dr. Tanner's new edition of his *Practice of Medicine,* I have incidentally met with the following appropriate instances.

"A peculiar sweet smell of breath may be perceived in persons having an internal suppuration. (p. 32.)

"A very disagreeable smell accompanies all cases of smallpox; and the breath is peculiarly offensive in scorbutus. (p. 44.)

"The odour of the breath is peculiar in lead colic. (p. 313.)

"Lastly, fetid breath occurs in gangrenous bronchitis."

Dr. Urquhart states (see Sir John Fife's *Manual of the Turkish Bath*) that there is an odour perceived to arise from human bodies, whilst perspiring in the bath, which is *characteristic of health;* and another which is perceived in disease; and that even the kind of disorder, in some cases, may be detected by the smell. He employed a sharp lad to detect the peculiar odour exhaled by different persons under the use of the bath, and asserts that this individual could discover not only the kind of disease, but even its peculiar seat. Thus were easily detected *albuminuria, gout, rheumatism, herpes,* and *ague.*

Mr. Urquhart says that the healthy body is not inodorous. It is endowed with a sweet odour, described by those whose organs are sensitive enough to detect it "as resembling *fresh sawn fir-boards.*" "At the common temperature, the body may be inodorous in all its parts, and the breath also; and yet, on going into a temperature of 220° Fahr., in five minutes a slight smell of gout will come out of the feet and the breath. Half an hour later, and after being in at the

higher heat ten minutes or more, the smell of gout may become very strong in the feet, legs, thighs, breast, stomach, breath, and back. The smell of herpes may have come out in the hands, the arms, and shoulders. Half an hour later, and after having been twice under the great heat, the smell may have been taken out everywhere." (pp. 234–5.)

He says again, that in these experiments he should be wholly at sea, without the sense of smell to guide him.—*Brit. Med. Journ.*, Jan. 13, 1866.

18. *Death after Vaccination.*—Dr. SKINNER read before the Liverpool Medical Institution "an account of a case of revaccination in an adult which ended fatally by toxæmia;" but how this was produced Dr. S. did not pretend to say, as there never was at any time the slightest appearance of undue irritation or inflammation, far less of erysipelas, at the seat of the operation. We must express our own conviction that the fatal result was not the result of the revaccination. The case is, however, a very remarkable one. "J. B., aged 15, a young lady, with a menstrual function fairly and healthily established, had all her life enjoyed good health, and on the day of revaccination was as healthy-looking as could be desired. On the 9th of March, 1865, she was revaccinated with matter of unquestionable purity, the history of which will stand the closest scrutiny. Her mother and three servants were vaccinated at the same time, and with the same matter. The matter, contained in one of Dr. Husband's capillary tubes, was perfectly amorphous, clear, and transparent. The method of operating was that first recommended by Dr. Graham Weir, of Edinburgh—a plan in which Dr. Skinner had the greatest, and still has, unshaken confidence. The vesicle ran its natural course, and a more natural one there could not be. On the ninth day it began to scab; and all appearance of redness, swelling, and induration also began to disappear. On the eleventh day (20th March), a severe rigor occurred, followed by abdominal pain and obstinate sickness; pulse 140. These symptoms were speedily followed by tympanitic distension of the abdomen, rapid emaciation, icteric and anxious countenance, gasping respiration, and all the usual signs of death by asthenic toxæmia. She died on the seventeenth day (26th March) after the operation and the sixth day after the rigor. No post-mortem examination was obtained; but so rapid was the decomposition of the body, that the features were not recognizable twelve hours after death."—*Brit. Med. Journ.*, Jan. 13, 1866.

19. *A New Remedial Agent in the Treatment of Insanity and other Diseases.*—The following is an account of a remedy which after several experiments Dr. S. NEWINGTON asserts he has found most useful in the treatment of insanity. It is a remedy which appears to him to afford a powerful and valuable means of withdrawing the blood from any diseased organ to which there is an abnormal determination; and, at any rate, it is often most efficient in subduing the excitement of mania and in inducing sleep.

"It is not known," he says, "that during sleep the quantity of blood in the brain is less than during wakefulness, and that the active circulation of much blood through the brain is incompatible with healthy sleep. When the cerebral functions are disordered from excess of activity, mental anxiety, or other cause, there is a determination of blood to the brain, sleeplessness ensues, and the effect in its turn becomes the cause of further mischief. Maniacal patients have been frequently brought to me who have been for six or seven days without sleep, and when repeated doses of morphia and antimony have proved worse than useless. Indeed, the frequent disappointments from the administration of narcotic drugs during an experience of twenty-two years in the treatment of insanity have led me to try various experiments for the purpose of obtaining some simpler and more certain method of calming excitement and producing sleep.

"While staying at Matlock Bath, I was induced to try the effects of being wrapped up in cloths steeped in mustard and water, and applied to the whole legs and to the lower part of the abdomen. After the removal of a wet towel which had been applied round the head and was very uncomfortable, I began to experience the most soothing effects, and gradually passed into a dreamy

semi-conscious state, which lasted during the half hour I was under treatment. On getting up, I felt very lively and joyous, the liveliness lasting the whole day; and for nearly twenty-four hours there remained a pleasant tingling sensation in the legs, which were affected in no other way than by redness. It occurred to me at once that this kind of application might be very serviceable in certain cases of insanity, and immediately on my return home I set about making experiments for the purpose of testing its value. The first experiment was upon myself.

"On retiring to rest I ordered a large basin of linseed-meal and mustard (ten parts of the former to one of the latter) to be made into a paste, and spread upon a sheet of brown paper sufficiently large to cover the whole abdomen, a piece of muslin being interposed to keep the skin clean. In a short time I fell asleep, and was conscious of nothing till eight in the morning, when I was partially roused by persons about me; but I was unable to speak or move. One of my medical assistants was thereupon sent for, and he pronounced me in a state of stupor from some narcotic. Though I was unable to speak, I heard the whole of the conversation, and was in a dreamy semi-conscious state. On the administration of some stimulant I presently recovered.

"Another form in which I use the mustard is this: two handfuls of crude mustard are tied in a cloth and placed in hot water, then squeezed in the hand until the strength of the mustard has been extracted. A thick towel, long enough to reach round the loins, is then wrung out of this infusion, wrapped round the body, and covered with a large piece of macintosh. In one case a patient suffering from acute mania, who was restless, sleepless, and refused food, was thus treated with the greatest benefit. Before the application the pulse was 108, but after two hours of this treatment it had fallen to 60 in the minute, and the patient was in a quiet semi-conscious state. Afterwards he took his food regularly, and in a short time left, perfectly recovered.

"A third form in which this derivative treatment may be applied is as a mustard bath: in other words, an ordinary warm bath, into which have been thrown five or six handfuls of crude mustard. In some cases the deep hip-bath only may be used; but in severe cases of mania the whole body of the patient, with the exception of the head, should be placed in the bath. A lady so treated, who had during the last year had four attacks of violent mania, each lasting for five or six weeks, has now for twenty-two weeks had no further attack, although the symptoms usually forerunning the seizure have on several occasions occurred; the mustard bath appears to have warded off the recurrence of the excitement. In this case the bath was used once every twelve hours, for half an hour at a time, during a period of ten weeks; so that the skin was kept in a constant state of redness. It may be hoped that the habit of diseased action has now been broken, and that this patient, after due probation, may be discharged as recovered.

"Mr. W —— was brought to me in a strait-waistcoat, and as many as six people had been, it was said, necessary to control him before his arrival at Ticehurst. Notwithstanding repeated doses of opium, he had not slept for six days and nights; and through the night after his admission he was excited, restless, and talkative. On the following night he was placed in a mustard bath for half an hour, so that he was perfectly red on being taken out. During the next eight days he had six of these baths, and at the end of a fortnight after admission returned home on trial.

"A lady who, notwithstanding repeated doses of morphia, had not slept for seven days and nights, was admitted in a state of mania, extremely incoherent and excited. After being in the mustard bath for half an hour she became calm and comparatively rational, and expressed herself as feeling much more comfortable. She was then wrapped up in a blanket and put to bed, where she soon fell into a sleep that lasted for seven hours; and in the morning she awoke free from excitement. The treatment was continued for six nights, and no further excitement occurred, although, as she had been insane for two years, her mind remained unsound.

"These instances, with others that I might quote, suffice to prove that in the proper use of these derivative measures we have a valuable remedial agency in

the treatment of insanity. As nature, aiming to restore the nervous element of the brain wasted by the day's labour, diminishes the activity of the circulation through it, and allows the process of repair to go quietly on, so we, imitating nature, strive in this treatment of insanity to withdraw the excess of blood from the disordered brain, and thus to favour the restoration of the natural equilibrium and the return of healthy function. And as when a morbid action continues for some time a *habit* of it is apt to be formed, and the habit to become a 'second nature,' so, on the other hand, whenever the morbid activity is interrupted, the tendency to revert to its sound type, which exists in all organic elements, fails not to assert itself, and, if sufficient time be allowed, to restore the normal function. We perceive then, how exceedingly important it is to produce natural sleep in the earlier stages of insanity.

"In using the mustard bath, it is necessary to protect the privates with a folded dry towel; and it is, of course, desirable to have the bath placed near the bed, so that the patient may pass directly from it into his bed. If a little constraint is required on the first occasion of its use, it will rarely be found necessary on any subsequent occasion."—*Half-Yearly Abst.*, vol. xlii., from *Lancet*, June 10, 1865.

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20. *Treatment of Delirium Tremens by Capsicum.*—A case of delirium tremens treated by Dr. Lyons with capsicum, is related in the *Dublin Med. Press and Circular*, April 18, 1866. A drachm dose made into a bolus was taken without any difficulty, notwithstanding that some slight burning sensations were felt in the mouth and throat for a time, and a sense of diffused warmth through the stomach and bowels for a brief period subsequently. In less than one hour after the bolus was taken he fell into a quiet sleep, and some three or four hours subsequently awoke, perfectly calm, conscious, and convalescent.

"The results obtained by Dr. Lyons, in the use of this drug, fully bear out the experience acquired on a far larger scale of observation in the West Indies, and in the Melville Hospital by Dr. Kinnear, Dr. Lawson, and others of his distinguished colleagues in the public service at home and abroad. In the records of the Melville Hospital, not less than from seventy to eighty cases are reported to have been successfully treated by the sole use of this drug, in single or repeated doses, ranging from one scruple upwards. No gastric disturbance or other unpleasant symptom has been at any time noticed.

"As a stimulant of great and immediate efficacy, Dr. Lyons considers that its action may be explained by the direct influence it exerts upon the gastric expansions of the vagi, and so indirectly upon the cerebro-spinal centres. The phenomena of the disease he considers to point to a double condition of stimulated excitation and partial paralysis of distinct and perhaps opposite portions of the nervous system.

"For general employment it cannot be doubted that, as pointed out by Dr. Lyons, the use of capsicum offers many advantages over either opium or digitalis. In cases of recurrent delirium tremens associated, as they often are, at a somewhat advanced period of life, with fatty degeneration of the heart, both the latter drugs are very distinctly contraindicated, and their use has not infrequently been attended with results far from satisfactory, even when free from fatal result, which has not always been the case."

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21. *Subcutaneous Injections.*—Dr. H. Fronmuller, Sr., of Fürth, recommends the subcutaneous injections of the salts of morphia in hysteria, whenever the first dorsal vertebræ are painful. He relates four cases in which this means succeeded. He injected the acetate of morphia in doses of one-sixth, one-fourth, one-third, and one-half grain.

In organic diseases of the heart, when the pulse is frequent, he has injected digitalin with success. This article is suspended in distilled water and administered in the dose of one-tenth to one-fifth of a grain.

After trying baths, electricity, the injection of strichnia in a case of paralysis of the bladder, he tried the subcutaneous injection of physostigma, the alkaloid of the Calabar bean, in the dose of from one-tenth to one-seventh of a grain,

and had the satisfaction of seeing the power of the bladder restored after each injection for from ten to twelve hours. He then was obliged to suspend the remedy on account of its costliness.—*Revue de Thérapeut. Médico-Chirurg.*, Feb. 1, 1866, from *Berliner Wochenschrift.*

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

22. *Lipoma of the Spermatic Cord; Diagnosis from Diffused Hydrocele.*—A young man, aged twenty-one, of lymphatic temperament, had had from the age of thirteen an inguinal hernia on the right side. At the age of eighteen, he first perceived on the same side a soft painless tumour, extending in the course of the spermatic cord from the fold of the groin to the testicle; the latter organ retained its normal size. Three years after the first appearance of this tumour, Dr. G. MARZATTINI examined it. It was elongated, and had the form of a pyramid with the base downwards corresponding with the posterior part of the testicle, and the apex connected with the spermatic cord in the inguinal canal. The spermatic cord appeared very large; it was elastic, painless on pressure, uniform throughout, and without fluctuation or transparency. The shape of the swelling was not effected by change of position. Its circumference at the base was ten inches. Several surgeons, including Dr. Marzattini, arrived at the conclusion that the case was one of diffuse hydrocele of the cord. On operating, however, there was found to be a reddish-yellow fatty mass, consisting of very small round fat-globules. This mass was surrounded by a capsule of very vascular connective tissue. The operation was continued; the tumour was completely removed; and the patient soon recovered.

The following are the points of diagnosis, according to Dr. Marzattini, between lipoma of the cord and diffuse hydrocele. 1. Lipoma is developed much more slowly than diffuse hydrocele. 2. It is not attended with inflammation. 3. Its form is very variable, while that of diffuse hydrocele is generally the same, cylindrical at first, then pyramidal. 4. In hydrocele, there is fluctuation, which may be caused to vary with the position of the patient. 5. Diffuse hydrocele occurs especially in weak subjects at an advanced age; lipomata, on the contrary, are met with in persons of good health.—*Brit. Med. Journ.*, March 17, from *L'Ippocratico;* and *Gazette Méd. de Paris*, Jan. 27, 1866.

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23. *Large Hygroma of the Foot.*—A girl, aged 15, of slender build, who had not yet menstruated, came under the care of Dr. J. F. HEYFELDER, of St. Petersburg, on account of a swelling on the dorsum of the right foot. It had appeared, without evident cause, six years previously, and had remained painless, but had increased in size until it extended from the tendo Achillis along the outer side to the phalanges of the toes, covering in the third, fourth, and fifth metatarsal bones. At first, the swelling presented the appearance of enchondroma, but was soft and fluctuating. It could be forcibly pressed and moved without pain; it did not impede the use of the foot, but prevented the patient from wearing a boot of ordinary shape. Dr. Heyfelder concluded that the tumour was a hygroma. On introducing a trocar, there escaped a somewhat turbid thick fluid, the flow of which was obstructed through the blocking up of the canula by some small granular bodies. These were removed, and many were driven out with the fluid through the canula by moderate pressure. It was found, however, that the tumour was only partially emptied; some cysts remaining distended, and refusing to yield up their contents when pressure was applied. Examination with a probe discovered a septum, which had to be divided before the other divisions of the swelling could be emptied. Dr. Heyfelder divided the inner septa in various directions by means of a long slightly curved knife, enlarging at the same time the external opening. By moderate pressure, the remainder of the contents of the swelling—a fluid of the thickness of honey, with granular bodies—

was discharged. A mixture of tincture of iodine, iodide of potassium, and water, was injected; and a cure was produced in fourteen days.—*Ibid.*, from *Berliner Klinische Wochen.*, 7 August, 1865.

24. *Multiple Neuromata Affecting the Nerves both within and external to the Spinal Canal, some of the Tumours being of a Cystic Nature.*—A case of this was communicated to the Royal Med. and Chir. Soc. (Jan. 23, 1866) by Mr. S. W. Sibley. It was submitted as being a remarkable example of the cystic form of nerve-tumour, and as an illustration of the extraordinary multiplicity which is sometimes observed in this form of disease. The subject of the disease was a coach-painter, who died at the age of forty-five in the Middlesex Hospital, under the care of Mr. Henry. The patient had enjoyed good health till seven years before his death, when he became less strong, but had no definite symptoms till four years ago, when the use of his lower extremities became impaired, and by degrees he lost all power of movement. He had also suffered from sloughing of the back. When admitted into the hospital he had no power over the voluntary muscles of the lower half of the body, the legs being contracted and drawn up. He retained some power of motion over his upper extremities, being able to feed himself if his food were first cut up for him. Cutaneous sensibility was quite absent in the lower extremities; but he was able to feel to a certain extent with his hands. The urine and the feces were passed involuntarily. A large tumour was observed below the elbow, and another below Poupart's ligament on the left side. He died after he had been in the hospital a month.

At the post-mortem examination there was no disease of the viscera of the chest or abdomen. The brain and the cranial nerves were healthy. On opening the spinal canal a number of tumours were observed connected with the nerves within the membranes of the cord. In the cervical region there were several tumours, and the largest of these (about the size of a large nut) had pressed upon the spinal cord, which at this point was extremely constricted and softened. There were also many neuromata in connection with the nerves in the lower part of the cord. In some places these were so numerous as to present the appearance of beads strung on a thread. The large tumour which was observed during life below Poupart's ligament was found to be connected with the anterior crural nerve. It was inclosed in a fibrous capsule, and on section presented the appearance of a fibro-cellular tumour interspersed with cysts. These cysts were of various sizes, the largest being about the size of an egg, and partly filled with imperfectly organized blood-clots. A second smaller cyst was filled with gelatinous material. The remaining small cysts were filled with clear serous fluid.—*Lancet*, Feb. 10, 1866.

25. *On Putrid Infection complicating certain Simple Fractures of the Jaw.*—In a communication to the Paris Surgical Society M. Richet drew attention to this subject, which he believed has been overlooked by all writers on surgery. Its purport is summed up in his conclusions: 1. Fracture of the lower jaw, when the alveolar-gingival periosteum has been lacerated, and there is also a displacement of the fragments, should not be regarded as a simple but as a compound fracture, since the seat of fracture communicates with the cavity of the mouth, that is to say, both with the external air and the salivary fluids. 2. Besides purulent secretion at the seat of fracture, and the various complications of neighbouring abscesses, osteitis, necrosis, or delay in reunion, observed and described by authors (but which I believe to be of much more frequent occurrence than is generally admitted), there are other accidents of a general character which may become very serious and even fatal. 3. These general accidents, characterized by scarcely perceptible and irregular shivering, putridity of the breath, diarrhœa, vomiting, &c., when they terminate fatally do not leave any traces discoverable after death. 4. These general symptoms cannot be referred either to purulent infection, properly so called, or to typhoid fever. They are due to a kind of septicæmia or putrid intoxication, which I think should be termed acute to distinguish it from what was formerly called hectic fever.

The best means of preventing this very serious complication is the maintenance of the fragments in a state of complete immovability after the reduction of the fracture; and this may be best done by means of ligatures applied to the teeth. Even when the symptoms are very far advanced they may be arrested by this means, as proved by a case related in the paper. M. Dolbeau also informed its author that he had seen very formidable symptoms of putrid infection disappear in two cases after incisions had been made in a dependent position. At a subsequent meeting of the society, M. Chassaignac pointed out that he had in his work on suppuration fully described this serious complication of fracture of the jaw, and its treatment by means of drainage tubes. Nevertheless, it is certain that the occurrence is far from being generally recognized; fractures of the lower jaw being usually regarded as of little consequence, and certain to do well. Yet, of 27 cases, collected by Malgaigne from the registers of the Hôtel Dieu, 4 proved fatal; and of 10 cases observed by M. Richet, 2 were followed by death by reason of this putrid intoxication.—*Brit. and For. Med.-Chir. Rev.*, April, 1866, from *Gazette des Hôpitaux*, 1865, Nos. 117 and 124.

26. *Impacted Fracture of the Neck of the Femur; Recovery with firm Union, and a freely movable Joint; Limb slightly shortened.*—The following uncommon case reported in the *Medical Times and Gazette* (April 14, 1866), which occurred under the care of Mr. GANT, at the Royal Free Hospital, well exemplifies the suggestions of pathology in the *diagnosis* of an obscure form of injury to the hip. It will be observed that there was in this case an absence or nearly so of all the symptoms usually enumerated as characteristic of this injury except shortening of the limb, and this existed only to the extent of about a half an inch in the first instance. All the other symptoms were reduced to their lowest degree, so as to almost escape observation; yet this very negation of the usual symptoms suggests our diagnosis. Observing some degree of shortening after recent injury; without eversion of the limb, or scarcely any; without alteration of the contour of the joint itself, or scarcely any; without perceptible crepitation or alteration of mobility at the seat of injury, and without much power to raise the limb; then we have before us a case of impacted fracture. The pain and partial inability to use the limb may point to sprain as the kind of injury which the hip-joint has sustained, but the shortening without the concomitant symptoms of fracture assure us of the presence of an *impacted* fracture.

W. C., aged 48, labourer, admitted October 4, 1865, was knocked down by a drunken man in the street. He (the patient) fell on the pavement, striking his right hip, and with the leg twisted under him. On attempting to arise, he found he had no power in the right leg, which felt, as he described it, a "dead weight" to him. Any attempt at moving it also caused great pain in the hip.

He was brought to the hospital, and on examining him in the recumbent position, the following symptoms presented themselves. The limb is slightly shortened—not more than half an inch less in length than the left—and it is slightly everted; but there is no marked flattening of the joint, the great trochanter being quite preceptible, although a little higher in position than on the left side; nor, on the other hand, is there any notable contusion or swelling. No crepitation or preternatural mobility can be felt on rotating the limb and grasping the trochanter. Lastly, there is not total inability on the part of the patient to use his limb. He can lift it off the bed to a height of some inches, and lower it again pretty steadily, though the movement is evidently attended with great pain.

The limb was allowed to remain at rest for two or three days until the immediate effects of the injury had passed off, and the hip would bear the pressure of a splint.

October 8.—It was noticed that the limb had shortened upwards of half an inch more, making the whole extent of shortening upwards of an inch. It was also then specially noticed that the shortening could not be altogether overcome, and the limb brought to its proper length, by extension.

A long splint was applied with a perineal band, and by tightening this occasionally to increase the extension, the limb was gradually brought down to only

half an inch of shortening, which was the length finally attained at the end of a month. When the splint was removed a gutta-percha splint was then moulded to the hip, and a starched bandage applied over it. The patient was allowed to get about with crutches. Nothing worthy of note occurred afterwards.

December 5.—The patient can bear his weight partly on the limb, and can swing it freely, but soon becomes tired. His general health and strength, which were feeble before admission, have now much improved under the influence of good living, quinine, and cod-liver oil. In this state, or a better, as to use of the limb, he left the hospital on December 28.

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27. *External Latero-Angular Dislocation of the Right Elbow-Joint.*—Mr. F. J. Gant records (*Med.-Chir. Rev.*, Jan. 1866) an instance of this remarkable and hitherto unrecorded dislocation. It occurred in a man, aged 50, whose right forearm was jammed between the "buffers" of two railway carriages, March 23, 1865. The patient was immediately taken to the Royal Free Hospital, where Mr. G. saw him, with his colleague Mr. De Meric.

The external appearances of the limb were peculiar. "The great transverse width of the elbow-joint was very obvious, and internally the trochlear portion of the humerus could be plainly felt and seen, threatening to protrude through the skin forwards and inwards—the direction which the humerus and arm, therefore, had assumed. More internally, another groove between the innermost ridge bounding the trochlea and the condyle was less conspicuous; and external to the trochlea the remainder of the articular portion, or capitellum, could be felt and seen, although less distinctly, as it receded from the skin, owing to the oblique direction of the humerus, its anterior surface looking outwards * * * * * * "Just above and behind the internal condyle there was a small contused aperture leading to the articular surface, thus making the dislocation compound. Externally, neither the condyle nor any bony prominence could be felt. The forearm was not only semi-flexed forwards, but its axis formed rather less than a right angle with the humerus laterally, an external latero-angle. The origins of the supinator longus and extensor muscles of the wrist were driven up in a heap, so to speak; and as they, in common with all the muscles, were prodigiously developed, the fleshy swelling above the external condyle was very conspicuous. Posteriorly, the olecranon could be felt, although the arm was, as I have said, half flexed; but this bony prominence was not in its relative situation and direction to the humerus; it was underneath the outer half of the articular surface or capitellum, and it had of course the transverse direction of the whole forearm outwards.

"Passing from the outline of the joint and the relative attitude of the arm and forearm, the aspect of the latter was no less remarkable. Its anterior surface looked obliquely inwards and backwards, so that the forearm was half pronated, and the hand hung with the thumb inwards, and the palm downwards."

"To complete the description: the forearm remained fixed or locked in this position from the elbow-joint to the hand, when the limb was left to itself. I may add, a large lacerated wound in the front, now the back part of the forearm, about its middle, led down to the radius and ulna, both which bones, with the interosseous membrane, could there be plainly felt and seen to the extent of about two inches, between the flexor muscles, now reduced to strings, as if they had been ploughed up in furrows.

"Strange to say, the skin was nowhere broken or bruised but in the two parts named—the front of the forearm, and just above the internal condyle; and there being scarcely any swelling at this early period, the appearances I have described were very striking.

"The pathological conditions discovered by dissection were no less remarkable: the skin was almost completely detached from the aponeurosis inclosing the muscles on the front and back of the forearm, and this lesion could be traced above the joint around the arm. The large tract of subcutaneous cellular texture, or superficial fascia, thus disorganized, was infiltrated with blood in patches here and there; yet this condition was not discernible through the skin itself, for the most part unbroken, and apparently unbruised. * * *

"The extent to which the muscles are destroyed by injury is equally mislead-

ing, because equally undefined externally. In the present instance the remnants of several muscles were visible through the large wound in the forearm. Dissection showed that all the flexor muscles, superficial and deep, were torn across, partially, or entirely. The flexor carpi radialis, flexor digitorum sublimis, palmaris longus, and the flexor carpi ulnaris—the whole group of muscles arising from the inner condyle, excepting the pronator radii teres, are severed in their muscular portion, sparing, however, the tendinous and aponeurotic portions, which now representing the muscles, appeared deep in the wound as so many shreddy strings, from which the muscular substance had been raked off. The two deep flexors of the thumb and fingers, respectively, are completely ruptured, thereby exposing both bones of the forearm, for an inch or two about their middle portion, from which, at that part, the periosteum was detached. The vessels and nerves have *all* singularly escaped injury. Thus, the ulnar nerve, stretched, but not torn, is also diverted from its course, as seen in the preparation and shown by the drawing. It passes from its groove, behind the inner condyle of the humerus, thence along the posterior margin of the articular surface of that bone, and thus gaining the forearm continues down to the wrist. It stood out in the wound as one of the strings referred to. The inferior profunda artery, accompanying this nerve above the condyle, is also unscathed. So, likewise, is the ulnar artery—a singular escape, considering the severe laceration of the two muscles, between which it and the nerve are situated in the greater part of their course. The median nerve, with its interosseous branch, and the corresponding branch of artery, are also uninjured; and lastly, the radial nerve and artery—this vessel beating freely under the finger when first I examined the arm, before amputation.

"It would appear that muscular texture offering less resistance to the forces of contusion and extension, all the muscles thus injured gave way; while tendons and aponeuroses, the nerves and vessels, being more resisting to such forces, none of these textures yielded. The latter cannot owe their preservation to position; for they were alike exposed to injury, the ulnar nerve and artery in particular." * * *

"All the muscles (excepting the ulnar portion of the flexor carpi ulnaris) which arise by a common tendon from the inner condyle of the humerus, pass transversely outwards over the bone just above its articular surface: thus corresponding to the ulnar nerve in its course across the posterior margin of the cartilage, in this case. Between the two, the articular end of bone has made its appearance, directed inwards and forwards, while its anterior surface looks obliquely outwards, so that the inner condyle is most anterior. As before mentioned, it and the trochlea threatened to protrude through the skin. Externally, the biceps and brachialis anticus muscles, both of prodigious size, diverted outwards from their course, exposed the capitellum of the humerus, but their insertions conceal the precise position of the ulnar coronoid process and head of the radius. More externally, or rather, owing to the lateral angle of the forearm with the arm—higher up, the supinator longus and the two extensors of the wrist are elevated as a great muscular cushion over the head of the radius. Of these muscles, the supinator and superficial (or long) extensor of the wrist, are not detached from their origin—the external ridge above the condyle; but the deep extensor carpi radialis (brevior) was partly detached from its origin—the condyle, this muscle being here split into two portions, loosely encircling the head of the radius, which by its dislocation was in contact with and immediately concealed by the superficial extensor. Posteriorly, the insertion of the triceps extensor muscle was not torn but twisted transversely outwards, in the direction assumed by the olecranon and shaft of the ulna.

"Of the ligaments; the anterior, the internal and external lateral ligaments, are entirely demolished, the posterior ligament alone remaining, under cover of the insertion of the triceps.

"The articular ends of the three bones forming the elbow-joint, have the following relative position: Both bones of the forearm have undergone an external lateral dislocation, as complete as is usually met with, the larger sigmoid cavity of the ulna resting against the external condyle of the humerus. But both bones of the forearm have also undergone a further and *peculiar* displacement late-

rally, whereby their axes form a right angle or less with the humerus; thus constituting an external latero-angular dislocation. The inner half of the large sigmoid cavity embraces the condyle and capitellum, just behind its articular surface; the coronoid process (concealed) resting externally against the one, and the olecranon being underneath the other as far as the ridge between it, the capitellum, and trochlea. The head of the radius (concealed) is in close relation to, not in contact with, the external ridge of the humerus and just above the condyle, the ridge bisecting the round articular facet. Thus, the head of the radius is neither in front nor behind the humerus; it is not dislocated forwards or backwards. A portion of cartilage was chipped off the articular surface of each of the three bones.

"Taking now the pathological conditions of the joint in connection with the external appearances of the limb, it may be inferred, that the radius and ulna were wrenched outwards to a right angle with the humerus, making an external latero-angular dislocation. Simultaneously, all the ligaments of the elbow-joint, save the posterior one, were entirely torn across; while the end of the humerus protruded inwards and forwards, between the ulnar nerve with the olecranon and the muscles arising from the inner condyle.

"The *width* of the elbow transversely was thus greatly increased, both by the new position of the radius and ulna, capped by the fleshy bellies of the three muscles overlying the head of the former bone, and by the trochlea of the humerus, which projected inwards and forwards as far as the skin. Above the (former) articulation, the projection of the humerus inwards produced a divergence of the brachial vessels and nerves; the ulna nerve accompanying the bone inwards was stretched around its articular end, the brachial artery and median nerve passing outwards with the forearm.

"The brachialis anticus muscle, partly torn off the end of the humerus with the anterior ligament, and diverted outwards, still remained attached to the coronoid process below; and the biceps also, diverted in like manner, still retained its hold of the radial tubercle. Both these muscles therefore, acting advantageously, *flexed* the forearm *forwards*, and rotating the humerus outwards, gave an oblique direction to its dislocated articular end; while the long supinator and the two extensors of the wrist, having alike become flexors, retained the forearm *laterally* bent on the humerus. Even the triceps muscle acted partly as a lateral flexor, its insertion supporting the olecranon outwards, in a kind of sling.

"Lastly, the direction of the front of the forearm *backwards*, was produced by the very favourable pronating action of the pronator radii teres, aided somewhat by the extensor carpi radiales, and by the remnants of flexor muscles passing from the internal condyle to the hand, all of which assumed the function of pronators, owing to the extraordinary direction of the forearm outwards upon the humerus. Hence also the pronation of the hand, the thumb inwards and palm downwards.

"The relation of the injury in the forearm to the dislocation produced is a question full of interest and importance. It indeed opens up a general inquiry, as to how far the production of this or that form of dislocation is determined by the action of different muscles, rather than by the direction of external force, which apparently effects the particular dislocations commonly witnessed; and whether therefore uncommon forms of dislocation may be referred to the division or injury of certain muscles in a part more or less remote from the seat of dislocation. In short, the question is, the relation of such concurrent injury to dislocation as cause and effect? Thus, if the quadriceps extensor muscle of the thigh was severed by a sword cut, as the person so wounded sprang forward, might there not then be produced a dislocation of the femur into the *perinæum*—a new form of dislocation, owing to this bone being delivered over to the resultant action of the ham-string and adductor muscles of the thigh, as by the momentum forward of the trunk, the femoral head started from its socket?

"Thus, then, it appears to me, that both the remarkable outline of the elbow-joint, and the striking attitude of the limb, flexed laterally as well as forwards and extremely pronated, are explained by considering the new relative position of the bones, the destruction of the ligaments, and peculiar disposition of the

muscles, subject possibly to the *freedom* given by the laceration of the flexors of the forearm. That the limb should be fixed or locked in the attitude thus acquired, follows, of course, from the peculiar grasp of the ulna on the humerus and the new action of the muscles around the joint.

"To reduce this dislocation, I should endeavour to unlock the bones by extension and counter-extension, *not* aided by the knee in the flexure of the elbow. That manipulation would, I think, make the radius and ulna start up still further laterally upon the humerus. Nor would I endeavour to extend the forearm in a line with the arm; but availing myself of the already relaxed position of the chief opposing muscles—namely, the biceps and brachialis, anteriorly, the supinator longus and the two extensors of the wrist, externally—I would draw the forearm down while bent on the arm, and simultaneously giving it a sweeping curve forwards and inwards around the external condyle and projecting capitellum of the humerus, I trust that the bones would snap into place.

"Amputation of the arm in its upper third was necessary in this case, owing to the extent of the injury. The operation, having been performed by Mr. De Meric, was followed by an excellent recovery."

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28. *Amputation at the Knee.*—Prof. SYME bears strong testimony (*Edinburgh Med. Journ.*, April, 1866) in favor of the advantages of Mr. Carden's method of performing amputation at the knee, which the Professor regards as one of the greatest improvements in modern surgical practice.

"When I began," says Prof. S., "to amputate at the ankle, and found the great advantage of dividing the bone through its cancellated texture, it naturally occurred that the same consideration was applicable to the knee, and that, when circumstances permitted, amputation should be performed here rather than through the thigh, with its dense shaft and medullary texture. But, unfortunately, not being then aware of Mr. Carden's plan, I formed a covering for the bone by cutting it from the calf of the leg, which proved very inconvenient, and so counterbalanced the benefit anticipated, that this operation soon fell into disuse. Mr. Carden, pursuing quite an opposite course, made a semi-lunar incision in front, from side to side, with its convexity nearly over the tuberosity of the tibia, and reflected the flap of skin thus formed, so as to expose the muscles above the patella, where what remained of the limb was divided transversely. The popliteal artery, and any of the small branches that required ligature having been tied, the ample covering of integument was brought down to its place, where, being secured by sutures, it lay without any tendency to retraction, or requiring the restraint of bandages, while the dependent opening afforded a free vent for the discharge of matter. No trouble was experienced in the after-treatment, and the stump proved entirely serviceable, since the skin over the bone, instead of becoming thinner, acquired additional thickness, so that the patients could rest upon it just as they do after amputation at the ankle.

"But the advantages of this operation are not limited to its facility and satisfactory results in the event of recovery, since its great claim to respect and confidence is the safety that attends its performance."

On the 19th of September last Prof. S. saw, with Mr. Annandale, a patient in the hospital "who had been admitted with both of his legs completely shattered by a large mass of iron falling upon them. It was obvious that he must die if the limbs were retained, and no less so that amputation of both thighs would in all probability prove fatal. I therefore suggested that Mr. Carden's operation might be performed, which was accordingly done by Mr. Annandale with the most satisfactory result."

Soon after this (October 23) Prof. S. saw, with Dr. Mackenzie, of Kelso, "a young farmer whose life was in great danger. It appeared that while on horseback, during the race week, he had been struck by the shaft of a cart in the crowded street, with such violence as to cause a fracture of his leg. There was no wound, but the limb suddenly swelled and became cold, with dark discoloration. Inflammatory symptoms succeeded, with corresponding constitutional disturbance, and on the fourth day it was generally supposed that the case must

prove fatal from spreading gangrene. But Dr. Mackenzie thought that amputation might still afford a chance of escape; and although the prostration was extreme, with a pulse hardly to be felt, so that cutting through the thigh must have been almost certainly and speedily fatal, I proposed to operate at the knee, and did so without delay, when it appeared that the posterior tibial artery had been ruptured at the seat of injury. The patient was no sooner relieved from the mortified limb than he began to improve, and, through careful nursing, made a good recovery with an excellent stump.

"On the 4th of November, Dr. Hislop, of North Berwick, requested me to see a clergyman who had been confined to bed for more than twelve months, by disease of the knee-joint, with no prospect of improvement, and constantly increasing weakness. It seemed that skin and bone naturally predominated in the constitution of his frame, and that from long-continued exhaustion little else of it remained. I should therefore have regarded amputation of the thigh as a most unpromising procedure, but with my recently acquired faith in the knee-operation, felt no hesitation in performing it. Everything went on favourably afterwards, and the reverend gentleman speedily regained his health, with a comfortable stump."

"On the 1st of January, W. M., aged 32, was admitted into the hospital on account of a compound fracture which his leg had sustained on the railway. An attempt was made to save the limb, apparently for a time with some prospect of success; but on the 9th, from the amount of discharge and the extent of shattering which was revealed by the ulceration and sloughing that had taken place, it became obvious that amputation afforded the only chance of escape. I therefore operated at the knee; and although the circumstances were most unfavourable for recovery. I had the pleasure of seeing the patient gradually improve in health, with the prospect of a good stump.

"A boy, æt. 6, was admitted into hospital on the 20th of January, with mortification of the foot, from a railway injury, and threatening of gangrene extending up the leg. I amputated at the ankle in the hope of arresting the mischief in progress, but with only partial success, since inflammation affected the periosteum, so as to cause necrosis of the whole tibia, and establish profusely discharging sinuses above as well as below the knee. The patient then became so extremely weak that his case appeared to be hopeless, and would, I believe, have proved to be so, had we not possessed a milder alternative than amputation of the thigh. I removed the limb at the knee on the 14th of this month, and the operation was followed, instead of sinking, by such an improvement of condition as encourages us to look for the most satisfactory result.

"Soon after his double amputation at the knee, Mr. Annandale had a patient, in private, suffering from disease of the knee-joint, who was so exhausted by hectic, bed-sores, and profuse discharge, that amputation of the thigh seemed to afford no prospect of recovery. He therefore amputated at the knee on the 25th of October, with the almost unlooked for result of complete recovery.

"Dr. Joseph Bell, who takes charge of the surgical clinical wards in my absence, admitted a patient on the 26th of January, who had suffered a compound fracture of both legs on the railway then in progress of construction at Queensferry, whence he had been brought all the ten miles in a cart. One limb was shattered beyond the possibility of recovery, the other being less seriously injured. The former was amputated at the knee, and the latter so successfully treated that the man is now able to walk on it with the assistance of crutches.

"From what has been said, I trust it will appear—

"1*st*. That Mr. Carden's operation is less dangerous to life than amputation of the thigh.

"2*d*. That the execution, ligature of vessels, and after-treatment, are simple and easy.

"3*d*. That the resulting stump is comfortable and serviceable.

"These considerations will, I trust, meet with due attention, and tend to promote the adoption of a procedure destined, I feel assured, to supersede amputation of the thigh, which, notwithstanding all the attempts to prove it, has so long remained an opprobrium of surgery."

29. *Ligature of the Femoral Artery for Aneurism.*—Prof. SYME relates (*Edinburgh Med. Journ*, May, 1866) a case of a man 26 years of age admitted into hospital 18th Nov. for a large femoral aneurism of two months' duration. Three days afterwards the Professor tied the artery. This patient, who suffered nothing from the operation, which had been done under chloroform, was immediately relieved from the excessive pain previously endured with hardly any cessation. The wound healed by the first intention, except at the ligature, which was detached on the 13th of December; and everything went on well afterwards.

This is Prof. S.'s thirty-fifth case of ligature of the femoral artery, in none of which has the operation proved unfavourable with the exception of one, which terminated fatally from suppuration of sac. "But," he states, "even on this solitary occasion the result could hardly be attributed to the operation, as the parts concerned with it were found perfectly sound and free from the morbid condition, which seemed distinctly referable to the derangement of health that had been induced by a prolonged attempt to cause coagulation through pressure at the groin. This treatment, continued for many days and nights, had disordered the patient's sleep, appetite, and mental composure, so as in all probability to excite a proneness to unhealthy action. Should such an explanation not be deemed satisfactory, the result of my experience in ligature of the femoral artery would still be one death in thirty-five cases."

It is well known, Prof. S. maintains that ligature of the femoral artery is the most efficient and safest cure for aneurism of that artery; and that its alleged danger depends upon its faulty performance. "To tie the femoral artery safely," he says, "the surgeon should be impressed with the conviction that the operation is one not of difficulty but of great nicety. He should make an incision between two and a-half or three inches long in the proper situation, cut through the fascia to a smaller extent, and expose the sheath of the vessels. So far he can hardly go wrong, but then, instead of hastening to pass the needle, he should, by ligature, or the temporary application of spring forceps, close every little vessel that discharges enough of blood to obscure distinct vision of the object he has in view. Let him now seize the sheath with dissecting forceps, and, gently raising it, make a small opening by means of a straight narrow sharp-pointed knife. The cellular and fatty substances which envelop the vessels in variable quantity are next to be elevated and divided in successive portions until the external coat of the artery appears quite distinct and *white*, when the needle may be passed without the slightest difficulty or danger."

"The local means employed," Prof. S. remarks, "for the remedy of aneurism may be divided into those which are effectual and those which are tentative or uncertain. The former comprehend amputation, ligature on the cardiac side of the tumour, and laying open the sac, so as to secure the vessel at its seat of rupture; while to the latter may be referred pressure, injection into the sac of fluids calculated to promote coagulation, and the agency of galvanism. It is obvious that the effectual means should be preferred in practice to those that are doubtful, unless some good reason can be shown for choosing the latter instead of the former; and it may now be inquired how far this admits of being done.

"Amputation can be justifiable only in cases altogether beyond the reach of any other remedy. Thus, a hundred years ago, before the Hunterian operation had been devised, amputation of the thigh was practised in cases of popliteal aneurism; and Mr. Wilmer, of Coventry, tells us that up to his time (1780) he was not aware of a single instance in which the patient had retained his limb. But now it would be considered unwarrantable to amputate, except when mortification had either taken place, or was evidently impending. Thus, in a case of axillary aneurism, where gangrene had extended from the fingers to the shoulder, I amputated at the joint through the tumour, and secured the artery close to the clavicle, with the result of a perfect recovery.

"Laying open the sac and securing the artery at its seat of rupture, or the 'old operation,' as it has been called, is certainly in general the most expedient method for remedying aneurism of a traumatic origin, since the great principle established by Mr. John Bell, and enforced by Mr. Guthrie, of arresting arterial

hemorrhage by means applied directly to its source, is no less applicable after than before the external wound is healed. In ten cases of brachial aneurism, resulting from wounds in venesection, I have pursued this course with success; and when the circulation can be commanded by a tourniquet, as in that situation, nothing can be easier than the operation. But when the tumour is so near the trunk as to prevent constriction of the artery concerned, there are other means that may be employed. In a case of carotid aneurism, having its base rather lower than the sternum, which had been caused by the thrust of an assailant's knife, I opened the sac so as to admit my finger, and closed the orifice with it until the vessel was exposed and secured on both sides of the aperture. In a very large aneurism of the gluteal artery, resulting from a stab sustained seven years before the patient came under my care, I introduced one finger after another until my whole hand was in the cavity, where it detached the firmly adhering clots, so as to place the injured vessel within reach of the ligature, when the sac was laid freely open. In axillary aneurism, again, I have found it sufficient to make an incision above the clavicle to admit the finger of an assistant, and allow it to exert effectual compression of the artery where it passes over the first rib.

"It has been supposed that the old operation, in its most extended employment, should be limited to traumatic aneurisms, but I have endeavoured to show[1] that there are some situations, and more especially the axilla, where it should be in general preferred on the ground of safety as well as facility. The disease usually originates here at some distance below the clavicle, in consequence of a sudden and violent action of the arm; and although the sac may attain a large size, it does not denote an equivalent destruction of the artery, which, on the contrary, may remain as sound within the cavity as when lying beyond it at an earlier stage of its progress. Encouraged by this consideration, I have repeatedly amputated with success at the shoulder-joint through axillary aneurisms, and still more frequently performed the old operation for their remedy, even when the tumour had attained an immense size. In the only case of this kind that proved fatal, the tumour had caused absorption of several ribs, so that the pleura formed part of the sac, and the patient died from inflammation thus induced, rather than from any effect directly due to the operation.

"Of the uncertain means, pressure is the least objectionable, and in the treatment of popliteal as well as femoral aneurisms, when applied at the groin, has frequently proved successful; but it has also not unfrequently failed and produced bad consequences, as would more distinctly appear if the failures had been no less carefully recorded than the successes. This method, however, has the advantage of being practicable by those who are not prepared to tie the artery with safety, and therefore may be employed when the circumstances do not admit of this being done. But while to this extent regarded as a useful substitute for the ligature, pressure must be held of inferior value to it when properly executed, on the grounds of facility, rapidity, painlessness, and safety: so that a surgeon who endeavours to cultivate the most beneficial exercise of his art, making excellence and not mediocrity the object of ambition, will hardly hesitate as to which of the two methods should be preferred."

30. *Lumbar Colotomy (Amussat's Operation) Successfully Performed for the Relief of a Vesico-Intestinal Fistula.*—Mr. T. Holmes, in a communication made to the Royal Medical and Chirurgical Society, remarked that "ulcerated openings sometimes take place between the bladder and either the small or large intestine, which have no connection with previous stricture of the gut, still less with cancer. In those cases in which the feces come from the lower bowel, and are consequently more solid, great suffering is produced, and the formation of calculus in the bladder becomes exceedingly probable. In such of these cases as are not dependent upon malignant disease, colotomy, by diverting the feces from the fistulous channel, may possibly enable the latter to close, and is at any rate necessary in order to relieve the sufferings caused by the feces passing into the bladder. The author read the notes of a case in which communication ex-

[1] Trans. Med. and Chir. Soc. of London, vol. xliii.

isted between the bladder and some part of the bowel above the rectum, and in which Amussat's operation was performed eight months since; the patient being now in good health, and in a condition of tolerable comfort, with evidence of considerable contraction, if not complete closure, of the fistula. References were also made to some other cases of communication between the bowel and bladder, with a view to support the opinions here put forward and the treatment adopted in the above case; and also with a view to the diagnosis of the seat of the communication with the bowel when out of reach of the ordinary means of examination.—*Lancet*, April 14, 1866.

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31. *Paracentesis Thoracis in an Infant.*—Dr. GUINIER, of Montpellier, publishes in full detail the history of a case which he believes to be without an analogue in the history of medicine. No case, he says, has been published in which paracentesis thoracis has been successfully performed on a child under the age of three years; but, in Dr. Guinier's case, the child on whom the operation was performed was only twelve months old, and recovered. The child was seized with febrile symptoms on March 3, 1863. On the 15th, there was, for the first time, distinct evidence of pleural effusion; and on the 28th, it being evident that no other remedy was of avail, tapping was performed with relief to the patient. A subcutaneous abscess afterwards formed, and was opened by a lancet; and a plug of charpie covered with cerate was introduced into the pleural cavity so as to close the cutaneous opening. This was done on April 13, and, on May 4, the child was considered well. The respiration was more extensive in the affected lung; the spine was pushed to the left, and the left side of the chest was narrowed. After several further notes of the state of the child's health, it is stated on March 30, 1864, that the child had had excellent health through the winter; that the deviation of the spine and the narrowing of the chest no longer existed, that the breathing was normal, there being very slight obscurity of the breath-sound behind. In November, 1865, the child was still in excellent health.—*Brit. Med. Journ.*, March 17, 1866, from *Bull. Génér. de Thérap.*, January 30, 1865.

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32. *Application of Chloride of Zinc in Solution to Surgical and Accidental Wounds.*—A writer in the *Lancet* (April 14th, 1866), bears testimony to the utility of this practice as recommended by Mr. De Morgan. (See last number of this Journal, p. 532 *et seq.*) He states: "We learn that whereas, previous to the adoption of this practice, erysipelas and pyæmia following operations were common occurrences, such accidents are now scarcely ever met with. The process has now been employed about nine months. During that time erysipelas has attacked no case in which chloride of zinc had been used, although numerous patients affected with the disease have been admitted into wards containing surgical patients. On the other hand, it happened quite recently that something like a crucial test was applied. An old woman had a tumour of the breast removed, and the application of the chloride was accidentally omitted. A few days after the operation she was attacked with erysipelas, which subsided and then recurred, involving her face and head. Again we are informed that during the same period only two patients to whose wounds the chloride of zinc had been applied have died from pyæmia: a young man in a very exhausted state, whose knee had been excised a month previously; and a woman, who had part of the sternum gouged out to remove some secondary cancer growth. She died six weeks after the operation. Long before this all direct effect of the chloride must have passed off; and Mr. De Morgan, with his present experience, thinks that had the wound been washed with the solution from time to time the result would have been different.

In the course of numerous visits to Middlesex Hospital, we have carefully observed the condition of wounds which have been treated by Mr. De Morgan's method, and these are the points which are most noticeable. On turning down the bedclothes and removing the dressings, we have always remarked the absence of that peculiar sickly smell which is commonly observed in the neighbourhood of open wounds, especially where bone is exposed. The wound itself is peculiarly healthy looking; the granulations firm and of good colour; suppura-

tion moderate; the skin up to the margin of the wound of perfectly natural colour and temperature. There has been indeed in every case which we have examined an entire absence of inflammatory action. Lastly, and this is a very striking and important point, many patients have told us that they felt no pain in the wound after operation; others have experienced pain for an hour or so; in none have we found it insisted upon as a serious inconvenience.

Until these results are witnessed, it is very difficult for any one reading or hearing of this process to divest his mind of the idea of destruction and irritation as necessarily associated with the use of a substance which is well known as one of our most powerful caustics. We are often, however, apt, unconsciously to endow a "caustic" with a sort of vitality—to look upon it as a substance possessing an inherent power of destruction under any circumstances. But it should be remembered that the caustic property of chloride of zinc probably depends upon the extreme attraction of this substance for water. Dissolved in that fluid, this quality, of course, ceases *ipso facto;* but the power of entering into certain chemical combinations in the tissues and blood remains.

33. *Citric Acid for the Relief of the Pain in Cancer.*—Mr. C. J. Denny states (*Lancet*, March 29, 1866) that he has found the application of citric acid to cancer to afford complete relief from pain. He uses one drachm of the acid to eight ounces of water. It must be used for two days before much effect can be expected.

OPHTHALMOLOGY.

34. *The Modern Methods of Dealing with Cataract.*—Mr. M. A. Adams, of Maidstone, read before the S. E. branch West Kent District Med. Soc., an account of the modern operations for cataract, and gave the results of the clinical experience gained in the Kent County Ophthalmic Hospital with these methods. He states that since the 1st of January there had been performed at the hospital just named 116 operations for cataract.

1. *Solution.*—In 28 instances, the ordinary needle-operation for solution was employed; 16 of these were cases of congenital cataract; 5 were traumatic. Three of the congenital cases were in members of the same family; besides which, two others—in all, five out of six children, born of the same parents, were similarly afflicted. The anterior operation has been universally adopted. In no case has there been an untoward symptom. In one only was the operation thrice repeated. In the general way, twice was found sufficient. In several cases this proceeding was supplemented by extraction by the suction-curette.

Mr. A. regards the operation for solution "as decidedly the simplest and safest for the removal of an opaque lens—most adapted to very young children, and always, when carefully performed, securing most satisfactory results, its only drawback being its tediousness. This objection increases in force with the years of the patient, hence the variety of new expedients which have at various times—but more especially within the last few years—been proposed to take its place."

2. *Linear Extraction.*—Advantage is taken in this operation of the action of the aqueous humour on the lens, which causes it to swell and become more friable, so that it will pass more readily through a small opening in the cornea.

"To carry this into practice, the pupil being well dilated by atropine, the cornea is pierced near its margin by a fine needle, with which the anterior capsule is very freely lacerated in the area of the dilated pupil. At the same time, the body of the lens is comminuted to a considerable depth, great care being taken not to injure the posterior capsule or to loosen the attachment of the lens-capsule to its suspensory ligament. This concludes the first stage of the operation.

"The eye is kept well under the influence of atropine; and in the course of one, three, or four days, the lens matter swells up, filling the pupillary area, and

sometimes both the chambers of the aqueous humour. And woe betide the iris if it be not well dilated at this time; it is squeezed and pushed in all directions by the swollen fragments of lens pressing upon it and the ciliary processes, sometimes causing great pain and ciliary injection, which, unless the second stage of the operation be at once proceeded with, would soon pass into destructive inflammation.

"Thus far all operators are agreed, the only difference being that some employ two needles, whilst others use only one.

"To complete the operation, Gibson used an ordinary cataract-knife to puncture the cornea near its temporal edge, on withdrawing which, some of the cataract was expelled with the aqueous humour; and, as far as possible, the remainder was extracted by the grooved end of the curette.

"It is more common now to use a broad lancet-shaped needle, two or three lines in width, which has the advantage of making an opening as large internally as externally.

"Mr. Walker has contrived a broad grooved needle, and so does away with the curette. To this there are the objections that, being obtusely pointed and somewhat thick at the shoulders, it requires considerable force to cause it to pass through the cornea; so that, on completing the erection, it is liable to jerk further than is intended; and that, as the chamber becomes emptied of its contents, the parts are in danger of being wounded by the point of the knife.

"To facilitate the exit of the particles of cataract along the groove of the instrument, slight external pressure is made; and closing the eye will sometimes also assist by causing fragments concealed behind the iris to make their appearance in the pupil, and so place them in a situation admitting removal by the curette. Seldom, however, is it possible to extract nearly the whole of the lens at one operation by either of these methods. Two, three, or more are generally required, at intervals of days or weeks, according to circumstances.

"As these several manœuvres occupy some little time, chloroform should be administered, as far as possible, to avoid the risk of such awkward accidents as wounding of the posterior capsule, protrusion of the vitreous humour, injury to the iris, etc., often caused by the straining of the patient. Suppuration in the tract of the wound is also liable to occur, and is easily accounted for by the frequent passage of the curette. Even in the very best of cases, some amount of iritis with adhesion to the anterior capsule must be looked for."

3. *Suction-Curettes.*—Many, if not all, of these difficulties, Mr. A. conceives, are surmounted by the suction-curette recently devised by Mr. T. P. Teale, Jr., and of which a full description with the method of using it was given in the No. of this Journal for April, 1865, pp. 516-518.

Mr. A. has had 25 cases of this operation in the hospital since the 1st of January, viz: 15 congenital; 4 traumatic; 2 diabetic; 4 various.

In two cases, a man and a woman, each of the age of 40, the operation failed, from the lens being too hard. (Mr. Teale has reported three cases—one of 40 years, two of 42 years, in which it succeeded easily.) In one case, a lad, 17 years old, severe irritation was caused by injury to the posterior capsule. In another, considerable iritis occurred; the poor boy, 8 years of age, being out of health from chronic albuminuria. Except these two cases all did well, and were restored to sight, with perfectly sound eyes in every respect, *minus* the crystalline lens.

"In a few of my earlier cases, the patients complained of excessive pain directly after the operation, which was immediately relieved by ice. I believe that this pain was caused by the too sudden atmospheric pressure on the eyeball, compressing the ciliary nerves. Since then, I have been more deliberate in the suction process, and have heard no more complaints of severe pain. Each of these several methods will perfectly dispose of a soft cataract."

4. *Iridectomy Operations.*—Mr. A. next describes the three methods of Schuft, Mooren, and Jacobson for dealing with hard cataract—"that is, hard in the accepted sense." We need not quote his account of these operations as they have already been described in the No. of this Journal for January, 1864, pp. 261-263.

It is seldom, if ever, Mr. A. says, that the whole of the lens can be removed

by one introduction of the scoop. "In the hands of the very best operators, so far as I have seen, it has been necessary to reintroduce it several times; and, even with this, it may well be doubtful if even the capsule is so thoroughly emptied of its contents as in a well conducted flap-extraction. Hidden behind the iris may easily lie concealed fragments of the marginal portion of the lens —entangled, perhaps, in the retracted shreds of its capsule; and, with the operator's utmost skill and vigilance some such fragments will occasionally, if not often, elude his instrument and escape detection. These within a few hours begin to swell, and are, no doubt, the most fruitful source of disappointment in this operation—setting up most severe iritis, the inflammation often extending to the deeper structures of the eye, leading eventually to atrophy and shrinking of the globe, if not to acute suppuration."

Each of these three operations, Mr. A. states, have been practised in the hospital, "but only those of Schuft and Jacobson since the beginning of the year; Schuft's five times, Jacobson's once. Four of the former have turned out very well; the fifth, I fear, will not prove satisfactory. This case was one of immature cataract in a woman aged 64. She had been under my observation for three years, during which time her cataracts, as regards their opacity, had apparently remained stationary. Everything went well with the operation, and I had no reason to expect other than a favourable issue. However, in the course of the night of the third day, she was seized with very severe iritis, since which she has been going from bad to worse.

"Doubtless, we must expect to meet with failure sometimes, whichever be the method chosen for the extraction of cataract. Nevertheless, I cannot help expressing a strong conviction, formed partly from the opinion of others, but chiefly from my own observation, that Schuft's operation is much more liable to the severe form of iritis than the old flap-extraction. Be this as it may, our success with the latter operation has led us greatly to prefer it before all others, as a rule, in cases of hard cataract. Perhaps a very prosperous season has caused us to form a higher opinion of it than we otherwise should do."

5. *Flap Extraction.*—"Of the 28 operations of flap extraction we have had within the time indicated, 25 were uncomplicated cases of idiopathic senile cataract; 16 were men, 9 women. The oldest was a man aged 80; the youngest a man of 47.

"In a woman, aged 70 years, a large prolapse, also in two men slight prolapse of the iris occurred. With these three exceptions, in every case the section healed perfectly within the week with central pupils. All recovered good sight except a man of 80 years, who, after progressing most favourably up to the eighth day, with every prospect of a most excellent recovery, was seized with violent diarrhœa, causing inflammation of the section, which soon extended to the iris, and ended in atrophy of the globe.

"Of the three complicated cases, in one, severe choroidal disease was known to exist; and, upon completing the section in the usual way, the lens was expelled before laceration of the capsule was attempted, and this was immediately followed by a bulging forward of the iris and hyaloid membrane from intraocular hemorrhage. No external bleeding occurred; but the globe soon became much distended, and there was considerable pain. There being no doubt as to the nature of the case, excision of the ball was performed.

"In another, owing to the patient's extremely feeble health, it was fully a month before the section healed; notwithstanding which considerable sight was preserved.

"In the third case, a poor, half-witted old woman would, in spite of all care and remonstrance, walk about the ward in the middle of the night crying and shouting, fancying herself in a lunatic asylum. She recovered excellent sight in one eye; but lost the other.

"As regards the operation itself, I need not detain you with a description of any of its details, except to mention that the upper section has been universally adopted.

"A few words will suffice to dispose of the accidents and difficulties encountered. Three times it was necessary to enlarge the corneal wound; once in the case of the unruly, half-witted woman before alluded to. In another, in

order to avoid cutting the iris, a large portion of which had prolapsed, the knife was withdrawn, and the section completed with the scissors. This patient had very large prominent eyes, and the accident arose from a premature escape of the aqueous humour. He afterwards suffered from prolapse; but eventually did tolerably well. In the third case, the upper lid slipped from under the finger and fell on the knife, which was withdrawn, and part of the iris removed after the section was completed; so converting the operation from an ordinary flap-extraction to a Jacobson's. The case did well.

"Once the lens was found completely degenerated, the capsule containing fluid and a little earthy matter.

"In the case of a woman, aged 71, the moment the section was completed, without there having been any external pressure on the globe, the lens sank bodily, capsule and all, out of sight into the vitreous humour, which was fluid. I failed in the attempt to seize it with the sharp hook; but succeeded in fishing it out with a Schuft's spoon. The patient recovered without a bad symptom, and with a circular and perfectly central pupil. Only in this and one other case was there any loss of vitreous humour.

"The capsular opacities flollowing flap extractions and suction operations, have usually either been torn through with needles or cut with the canula-scissors, but, whenever possible, removed by the canula-forceps. While, after the twenty-eight flap-extractions, this proceeding was necessary only in five instances, it was required seven times after the twenty-five suction operations.

"Altogether, there have been twenty-seven capsular operations."

In conclusion, Mr. A. says that the suction method and the operation of Schuft "are destined often to take the place of the older methods of solution and flap-extraction. Without presuming to decide upon the merits of these two operations, I would venture to indicate that, whereas in the case of extraction by suction the improvement is, though perhaps less important, more obvious, it is surely a step in the right direction when an operation can be simplified, and at the same time the cure rendered more sure and perfect; and this, as far as my experience will allow me to speak, is attained by the operation of suction. With a smaller wound, at one operation, in a few moments, a soft cataract can be wholly removed from the eye, with little irritation, and with no injury of consequence to any of the important structures.

"Here, then, the improvement is most obvious. No one can question it. Not so with the operation of Schuft; which has not, so to speak, such *primâ facie* evidence of improvement over the flap-extraction as suction has over the older linear. That it possesses great claims to be well considered, all will admit; for instance, the comparative security from prolapse, and a non-adaptation of the wound, which the smallness of the section secures, are great boons; yet this advantage has its drawback. Does it not introduce a new element of danger into the operation? Only consider how very little short of the full half section in flap-extraction will impede the exit of the cataract. What, then, takes place in the removal through a quarter section? Either the lens must break up into fragments, or allow its shape to accommodate itself to the wound; or, which is impossible, the wound itself must stretch. The fact is, the lens often does break; and, when it does not, it is forcibly squeezed into proportions which will allow of its passage through the wound. If the broken fragments can be thoroughly extracted, well and good; but some are very likely to elude observation, and, as I have before stated, set up severe iritis (the bane of this operation); or, if the lens have tenacity enough, and the surgeon have patience enough to withdraw it whole, the squeezing of the lens into shape is also a pressing and bruising of the lips of the wound and the neighbouring parts to an equal extent. This, then, gentlemen, if you agree with me, is a weak point in the operation, and all the more detracts from its merits, since there is no such risk with the old flap extraction."—*Brit. Med. Journ.*, Jan. 13, 1866.

35. *Black Cataract.*—It is stated (*British Med. Journ.*, Jan. 27, 1866) that an actual black cataract has been lately removed by Mr. WALTON at the Central London Ophthalmic Hospital, of which we give the particulars, as there are some points of physiological and pathological interest connected with it.

"A man, 65 years of age. was sent to Mr. Walton by Mr. Philbrick, of Colchester, because of his blindness. In both eyes there was the congenital defect, coloboma iridis, or deficiency of a segment of the iris, in a marked degree. His sight was so little affected by it, that he worked successfully as a gardener, and his employers never knew that he had any defect.

"The coloboma is sometimes accompanied with a split or fissure in the retina. It is impossible to say whether this existed; probably not, because of the quality of the sight.

"Except that there were a few minute dots of gray in the pupil of the left eye, nothing could be recognized there, as all else was black. Even when the light of the ophthalmoscope was concentrated on it, nothing more could be seen: but as the interior of the eye could not be illuminated, sufficient light not entering for the purpose, it was evident that there was some black body that intercepted the rays. There was scarcely any sight in the eye, only the mere perception of light from darkness.

"Mr. Walton operated by extraction, and made the lower section of the cornea, because the iris was cleft in that direction. The cataract proved to be quite black, and of the usual consistence. It was put aside for minute examination, but unfortunately was destroyed. The gray markings spoken of must have been in the capsule, for no such appeared on the cataract.

"The case proceeded without a bad symptom, and the cornea healed well, but there was no beneficial result. There is no more sight than existed before the operation. This important question then arises. Are those changes in the interior of the eye, by which the eye is spoiled, and the nature of which cannot be ascertained by the ophthalmoscope when the crystalline lens is lost, associated with the peculiar alteration in the lens? Do they go together as allied diseased states, or is their association accidental?

"But a few years ago, every case of loss of sight, in which the pupil looked black, was called amaurosis. It is very likely that many a black cataract was so designated. This shows how necessary it is to use the ophthalmoscope, both for the positive and the negative information we get from it.

"In the right eye also there was cataract. The centre of it was quite black, while a small marginal portion was rather deep brown than black. The interior of the eye could not be illuminated by the ophthalmoscope. There was very little sight. Mr. Walton did not operate; he thought it most probable that the back of the eye was defective, as on the opposite side; and the patient was not at all willing for an operation."

36. *Iridectomy in Glaucoma.*—Mr. T. Wharton Jones, in the late edition of his *Treatise on the Principles and Practice of Ophthalmic Medicine and Surgery*, gives, we conceive, a just estimate of the over-vaunted operation of iridectomy for the cure of glaucoma. He observes:—

"Iridectomy is commonly said to operate beneficially by removing intraocular distension, and thus relieving the retina and ciliary nerves from pressure. No doubt it appears to produce some such effect, but how does it operate in removing the intraocular distension? is the question.

"On the assumption that the surface of the iris is the principal source whence the aqueous humour is exuded, iridectomy has been said to remove intraocular distension by diminishing the extent of the exuding surface, and thus setting a limit to the accumulation of aqueous humour. We have, however, seen that whatever good iridectomy may do in the way of diminishing intraocular distension, it cannot be by removing a source of the aqueous humour, because we have shown (p. 150) that the iris has little, if any, share in secreting aqueous humour. And it is evident that if it had, the removal of so small a portion of that membrane would not be likely to produce any great impression on the quantity of aqueous humour exuded. We have, moreover, seen that in glaucoma the intraocular distension is not owing to an increase in the quantity of aqueous humour, but that, on the contrary, it has its seat in the posterior segment of the eyeball.

"An opinion has been expressed to the effect that iridectomy, by establishing a larger and freer communication between the two chambers of the aqueous

humour, promotes the diminution of intraocular distension. The force of this opinion, however, I cannot see, even supposing what has just been denied, that the distension has its seat in the aqueous chambers.

"In reviewing our case in order to discover what can be ascertained from it in explanation of the *modus operandi* of iridectomy, we must not overlook the effect of the preliminary section of the cornea, and the evacuation of the aqueous humour that takes place, in relieving the tension of the eyeball at the time. We all know what relief to tension is elsewhere afforded by an incision through a fascia investing a congested or inflamed part; and although undue accumulation of aqueous humour is not, as we have seen, a cause of the distension of the eyeball in glaucoma, still the evacuation of the aqueous humour must contribute for so much to the relief of the distension. * * *

"We have seen that it is in acute glaucoma that most benefit to sight is derived from iridectomy. This effect, such as it is, must, in my opinion, be looked for in the circumstance that the disease not having been of long standing, the retina may not as yet have suffered material organic change, and, therefore, is still capable of resuming to some extent its function on being relieved from pressure by the subsidence of the inflammatory congestion, and the consequent absorption of superabundant fluid in the posterior segment of the eyeball.

"Although by iridectomy, the inflammation was, in the case of acute glaucoma under notice, subdued and the sight somewhat improved, there was not a restoration of what may be called *good sight*. In chronic glaucoma, the result of iridectomy is much less favourable. We have only to look through the table of cases in the Ophthalmic Hospital Reports (No. 10, January, 1860), to be satisfied of the inefficiency of the operation in chronic glaucoma.

"It is thus perceived how unfounded the claim is which has been set up for iridectomy as an unconditional cure for glaucoma.

"The operation, however, proves a useful auxiliary in the treatment of arthritic posterior internal ophthalmia, or, as it has been called, acute glaucoma. And here it may be said, *remedium anceps melius quam nullum*.

"We have seen that there are certain symptoms premonitory of glaucomatous failure of sight. In such a case, iridectomy has been especially recommended as a prophylactic of the threatened mischief.

"If, under such circumstances, it should be thought warrantable to propose the operation, we ought to do so only with great reserve, as we cannot truly give our patient an assurance that the operation will have the desired effect of preserving his sight.

"That iridectomy and extraction of the lens combined may not permanently secure the eye against an attack of acute glaucoma, was shown by a case of cataract I treated in the hospital some years ago. The patient was a woman about sixty years of age, and the eyes were at the time otherwise quite healthy. I performed extraction on one eye, and in making the section of the cornea, the iris, in consequence of a premature escape of the aqueous humour, fell before the edge of the knife, and a very considerable piece of it was cut out. The lens was easily extracted, and the case did well. The eye, indeed, recovered so rapidly that the patient was able to leave the hospital within ten or eleven days after the operation. Having been fitted with cataract glasses, the woman enjoyed capital sight, and continued to do so for some two or three years. At the end of that time, she one day presented herself at the Eye Infirmary, complaining that the sight of the eye was totally gone. She stated that the eye had been inflamed for some ten days past, and that she had been suffering severe pain in the head all that time.

"On examination, I found the eye—the eye on which both iridectomy and extraction had been performed—hopelessly glaucomatous.

"Suppose this patient had been seen earlier in the attack, would a second iridectomy have saved the eye? It is not likely; but if so, it is evident that the eye could not bear much further repetition of it, for the good reason that there would be at last little of the iris remaining to cut away.

"This suggests the question, Are persons with congenital absence of the iris liable to glaucoma? Such persons are rare, and I have never seen one affected

with glaucoma exactly, though I have seen one attacked with internal inflammation of the eye of somewhat arthritic character, after an operation for cataract. This was the case above mentioned (p. 150), in which, after *paracentesis corneæ*, the aqueous humour was as quickly and completely regenerated as usual. I do not, however, suppose that congenital absence of the iris offers any immunity against glaucoma. If so, what could an iridectomist do in case of an attack?"

37. *Von Graefe's Eye Clinic.*—Dr. A. Samelson, of Manchester, has published (*British Medical Journal*, March and April, 1866) his "Reminiscences of Four Months' Stay with A. Von Graefe in Berlin."

Dr. Samelson's description of the hospital building would not lead us to infer that it possesses the hygienic advantages which are usually deemed desirable; and if to this we add the statement that general remedies are held to be of little value, there seems to be abundant ground for surprise that the results of treatment should be so successful as they are claimed to be.

"The edifice of Von Graefe's Eye-Clinique," says Dr. S., "is a corner house, in the main three-storied; but a small portion of the back façade, going by the name of the "small house," consists of two stories only. The block, as it appears at present, is a combination of three houses, none of which was originally planned for the purposes of a hospital; and, as there has never been a thorough reconstruction, the interior is of almost bewildering intricacy. In most parts of the building, the sick-rooms are opposite each other, divided by a narrow passage, and looking into the street or into the yard respectively. The rooms are heated, each separately, by means of the customary German stove, constructed of glazed tiles, and standing in a corner of the room. The stairs, passages, and some of the dwelling-rooms, are lighted with gas; in the sick-rooms candles are used. There is no artificial system of ventilation; but the building is provided with pipe-water and with water-closets in all its stories. These latter are far from being *cabinets inodores*, owing chiefly to an overwhelming stench of tobacco—a nuisance the toleration of which is the more surprising, as persons of both sexes are compelled to resort to these abominable places. There is only one bath in the whole building. None of the rooms are without double windows and weather-blinds—the latter made of strong linen twill, and moving between the two windows. Every door is edged throughout with list of woollen cloth. The curtains, the inner blinds, and the bed-screens are all of dark blue merino; the folding candle-screens are of green silk. On the ground-floor there are no more than four or five sick-rooms for private patients; there is, besides, the diphtheritic ward, consisting of a few small rooms. The remainder is occupied by the clinical department on the one side; the porter's room, the inspector's dwelling-rooms, and the patients' assembly-rooms, on the other. The kitchen, presided over by a male cook, is under-ground, where also some of the male servants are accommodated.

"The clinique affords accommodation for upwards of one hundred patients.

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"The private sick-rooms, about fifty in all (there being some in the first story, rented for the purpose, of a house opposite the clinique), are of various proportions, a small number of them being narrow and one-windowed only; by far the majority are on the first floor. Each contains, for the most part, one bed only; and the office of this has, in the smaller rooms, to be performed by the sofa, inside which the bedding is placed during the day. The furniture—mahogany, and fully sufficient—is pretty uniform in all the rooms. * * *

"The *remedial agencies* in which trust is here placed are few in number. Internal remedies, as we have said before, are little in request; for specific purposes mercury and the iodide of potassium—the latter often in combination with iodide of mercury[1]—are appreciated. The preferred method for mercurialization is inunction. Of late, the Turkish bath has become a favourite resource, apparently for alterative purposes generally. Aperients do not seem

[1] Iodide of potassium ℥j; iodide of mercury gr. vj; water ℥iij. A teaspoonful to be taken in the morning.

often to be thought necessary. For the ordination of quinine there is much less occasion than we find in this country. (Altogether, the out-patients, as regards appearance and intelligence, are of a different cast; as the national wealth of Prussia is yet far from the standard of England, so her national misery, if it ever should come to rival, has not yet attained to British dimensions.) A combination of camphor and carbonate of ammonia is occasionally, at the clinique, ordered for the same purposes for which here the more expensive quinine is prescribed. Blisters are but sparingly made use of, and issues all but ignored. General depletion appears to be entirely abandoned. Local bleeding is, in the inflammatory condition following operations, utterly repudiated; and, in acute disease generally, very little resorted to. Contrariwise, in congestive conditions, especially those so frequently attending amblyopic disease, extensive use is made of *Heurteloup's artificial leech*, with the application of which a special surgical assistant is intrusted at the clinique. The eye-douche continues to be held in deserved esteem. There are, further, the multitudinous orders for the various refracting-glasses, either spherical or cylindrical; a kindred resource is the prismatic glass in muscular asthenopia, etc. * * *

"Atropia, as it were the staff of ophthalmology, is extensively resorted to; but we were gratified to find much discretion observed in its use. Correspondingly, those tedious and obstructive conjunctival and erysipelatous affections consequent on its administration appear to be comparatively rare. The application is made with the brush.

"Of the remedies directly applied to the palpebral conjunctiva, the solution of the absolutely neutral, and thence so inoffensive, acetate of lead (generally one drachm to the ounce) and the nitrate of silver stick, mitigated by the admixture of double the quantity of nitrate of potash, are in the order in which they are here named by far the most frequently employed. The light-handed touch, the circumspect restriction of the remedy to the really affected locality, and the singularly painstaking ablution (with water in the case of lead, with a solution of chloride of sodium first and then with water in the case of the caustic) must, in our opinion, be ranked among the characteristic features of the treatment here bestowed. The mitigated lapis seems to have almost superseded the sulphate of copper so much in request some twelve years since, when we attended this clinique. However, when used, the sulphate of copper crystal is here employed in a very elegant form, viz: carefully ground into pointed cones which are fixed in a crayon-holder—to be obtained, like the other articles mentioned above, from the wholesale house of Mr. Simon, Spandauer Strasse. The use of the unalloyed lunar caustic is almost limited to the purpose of obliterating the lachrymal passages; for a similar end the nitrate of silver is, in suitable cases, also employed in the form of small silver probes or of bougies coated with the salt. Other favourite topical administrations, partly of recent introduction, are the inspersion of calomel, the application of liquor chlori, and especially that of Pagenstecher's amorphous oxide of mercury ointment—all these in fascicular or phlyctenular kerato-conjunctival affections; the latter excellent remedy (which is regularly removed from the eye again after a few minutes), also in subconjunctival circumcorneal) inflammation. The tincture of opium is considered by Von Graefe as a specific in the *dry* form of conjunctivitis. Amongst the derivatives might still have been mentioned the frequent application, but lightly made, of the mitigated lapis or the concentrated lead vinegar (solution of basic acetate of lead) to the cutaneous surface of the upper lid; but, above all, the almost stereotyped use, in acute inflammation attended with more or less intolerance of light, for inunction to the forehead, of Arlt's salve, containing the extract of belladonna and the white precipitate of mercury in varying doses (in most cases respectively one and two parts to twelve of fat). In the administration of this ointment, it is not the specific action of the ingredients which is sought; the remedy appears, in the main, to be intended as a sedative and counterirritant, and is usually directed to be applied in tolerably large quantity from six to eight times a day. The practice of ordering bulky lotions does not prevail at the clinique; the most frequent prescription is that of two drachms of the acetum plumbi, of which a few drops mixed with a few ounces of water furnish a lead lotion to the patient which he may thus fre-

quently renew for himself. Of very general extemporaneous employment are the elegantly prepared glycerine and starch ointments (Simon's), with their admixtures of sulphate of atropia or acetate of lead or nitrate of silver. Tar is another local application ever at hand for cases of exanthematous lid-affection.

"We conclude this survey of the pharmacological armoury with a reference to some of the principal instruments of treatment relied upon by Von Graefe. Sustained pain after operation is invariably met by the subcutaneous injection of morphia; iced compresses are the chief remedy opposed to the diphtheritic process during its yet unbroken severity, and are likewise resorted to when cutaneous inflammation rises to an excessive height. But the great adjuvant in the subjugation of danger, or in the conquest of a partial effect at least, is the systematic use of *compression*, in many instances alternating with warm chamomile fomentations, of a temperature regulated in accordance with the requirements of the cases. It is this latter method of proceeding matured to its present perfection by the thoughtful and assiduous study of many years, and ever and anon, in the individual cases, practised with unswerving vigilance, which, in our opinion, again constitutes one of those patent secrets of success attending the practice of a master of the healing art."—*Brit. Med. Journ.*, March 24, 1866.

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38. *Von Graefe's Treatment of Affections of the Conjunctiva and Cornea.*—Dr. A. Samelson says, that "in the ordinary form of conjunctivitis, weak solutions of nitrate of silver and acetate of lead are the applications widely preferred" by Von Graefe; "the latter as an eye-drop of the strength of two grains to the ounce. The abortive treatment by means of the strong solution of nitrate of silver appears much less in favour than it was at this clinique in former times. Applications containing the sulphate of zinc or of copper are more rarely, and the bichloride of mercury still less frequently, employed. Alum or borax are reserved for the convalescent period of the affection. Tincture of opium is considered the specific remedy for a form of conjunctivitis, apparently of not unfrequent occurrence, which is characterized by much redness, but only moderate swelling, of the mucous membrane, with considerable pain of a grating or pressing nature, and by the absence of discharge.

"To the treatment of *phlyctenular conjunctivitis* we have adverted before.

"*Trachoma* is treated, as the cases require, now with the neutral acetate of lead in solution or in glycerine ointment, now with nitrate of silver, either in the form of glycerine ointment or of the mitigated pencil. A sulphate of copper ointment is occasionally ordered for home use. The application of acetate of lead in substance is deprecated.

"In *blennorrhœa neonatorum*, the sovereign remedy is the mitigated caustic; scarification seems scarcely to be practised any more; implication of the cornea is met by sustained instillation of atropine; while corneal perforation is, on the whole, dealt with in the same manner as we shall presently see it treated in ocular diphtheria. The principal measures resorted to in this latter pernicious affection, which now appears never to die out entirely at Berlin, are, the transfer of the patient to a separate ward, rigorous occlusion by collodion-dressing of the sound eye, if one only be affected, and unremitting application of iced compresses. Incisions of the stiffly infiltrated mucous membrane are utterly repudiated. It is most rare for the cornea to escape implication, whilst in some cases it is doubtless idiopathically affected. When perforation, as is the rule, has taken place, the most thorough levelling of the ulcer is considered indispensable; the mitigated nitrate of silver is applied to the conjunctivæ of both lids (if their already more soaky condition warrants its use), and atropine is instilled; the morbid substance projecting from the ulcer is unsparingly removed with scissors; and this proceeding is repeated daily, so long as there is any occasion for it. Contingently, the lens, if pressing forward, is let out; and often some vitreous body is cut away in addition. This course alone is found to avail in rescuing whatever little can be saved. Out of many cases witnessed, we shall relate the following.

"In a girl, two years old, who was said to have been brought to the clinique

with both corneæ yet intact, whose left eye was now, however, already lost, and whose skin, near the outer angle of each eye, was affected with diphtheritic patches, the palpebral conjunctiva of the right eye was quite stiff and smooth—*i. e.*, in that condition which does not yield to cauterization; and the cornea was perforated at the bottom. On eversion of the lids, the iris protruded—vascularized, infiltrated, a fleshy mass. Under chloroform, an incision was made with a Beer's knife through the protruded iris, and scissors were employed for the removal of the prolapse, when the capsule came into view, which was now opened with the cystitome. The eye being already less in size than its fellow, the exit of the lens had to be promoted by pressure with the curette, and, this unavailing, by slight dilatation of the corneal opening with the knife. After the evacuation of the lens, some of the vitreous body was removed three or four times with scissors. Fully the upper half of the cornea was yet preserved; the eye looked rather more promising after the operation; yet scarcely any hope was held out. Von Graefe then applied the compressive bandage, which, in such conditions, is regularly employed in alternation with tepid chamomile fomentations. Death, which in most instances closes the scene, is looked upon as the only consolation in these distressing cases."—*Reminiscences of a Four Months' Stay with Prof. A. Von Graefe*, in *Brit. Med. Journ.*, April 14, 1866.

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39. *Treatment of Pannus.*—According to Dr. SAMELSON Dr. Graefe esteems two proceedings for the relief of pannus; viz., peritomy and iridectomy. Inoculation is well-nigh abandoned, owing to its results having been unpropitious in Von Graefe's hands; though he is far from discrediting the more fortunate experience of others, particularly Belgian ophthalmologists, with whom different conditions appear to favour the enterprise. Peritomy is not unfrequently practised; only a small ring of conjunctiva is removed, and the caustic, as originally recommended by Furnari, is dispensed with. The effects obtained are moderate. Of great interest we thought the insistance upon iridectomy, as necessitated in a good many cases of pannus by the coexisting slow iritis, which is very apt to be overlooked, yet, while it lasts, robs of their effectiveness whatever measure may be adopted.—*Ibid.*

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40. *Dermoid Tumours.*—These, Dr. SAMELSON states, are not unfrequently seen, at Graefe's clinic, mostly astride on the corneo-scleral frontier, are successfully removed by dissection, which is not generally found necessary to be thorough.—*Ibid.*

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41. *Syphilitic Affections of the Eye.*—MM. QUAGLINO and SCARENZIO arrive at the following conclusions from a number of observations.

1. Though there are no characteristic signs of syphilitic retinitis, it may be affirmed that the disease in the majority of cases affects the entire field of the optic papilla, the surrounding portion of the retina, and the yellow spot. The contour of the papilla frequently presents masses of black pigment, giving it an irregular appearance, and apparently due to proliferation of the pigment-cells of the choroid. Syphilitic retinitis frequently terminates in pigmentary degeneration and atrophy of the retina to a greater or smaller extent, in atrophy of the retinal vessels and of the nervous substance of the papilla, and in lesion of the posterior aspect of the retina, characterized by a reflection of a grayish or ashy colour, most apparent in the course of the vessels. In severe cases, the choroid may be attacked, giving rise to the formation of yellowish serous and lymphatic exudation, loss of pigment, and compression of the retina, with atrophy of the columnar layer. In such cases, the pigment-cells of the choroid are infiltrated into the meshes of the atrophied retinal tissue, and constitute the peculiar alteration termed pigmentary retinitis; the pigment may in this way be spread over the whole surface of the retina, and even over the optic papilla. When the amaurosis produced by syphilitic retinitis is secondary to the extension of a morbid process from the iris to the choroid and retina, it is impossible, although the papilla be still free, to examine the fundus of the eye, in consequence of the presence of grayish false membranes, and of the dulness

of the superficial layers of the crystalline lens. Syphilitic retinitis and choroiditis, as well as iritis, are developed most frequently in an advanced stage of the constitutional affection, and belong to the secondary as well as to the tertiary phenomena.

2. In most cases, the functional symptoms of syphilitic retino-choroiditis are the following. *a*. There are asthenopia, trembling and uncertain vision, photophobia, visions of globes of fire or black spots, chromatopsy or pseudo-chromatopsy, and muscæ volitantes. *b*. There is a gradually increasing weakness of the power of vision. *c*. The field of vision becomes progressively limited from the circumference until it is limited to a narrow space. Frequently also obscurity commences in the centre of the field of vision. In either case, sight may remain limited, or may extend little by little. *d*. The hemeralopia which is often observed in cases of degeneration or pigmentary infiltration of the retina in syphilitic subjects, is a phenomenon which appears very late, and appears to be the effect of loss of sensibility in the retina and progressive atrophy of the papilla. *e*. If constitutional syphilis have produced periostitis of the orbit or a swelling implicating the filaments of the fifth pair of nerves, the patient experiences, independently of impaired vision, violent supraorbital neuralgia, with nocturnal exacerbations; exophthalmia may even be produced: there is then a severe almost constant pain in the temporal and frontal regions. The motor nerves alone may be attacked.

3. These affections have generally a very slow, often irregular course.

4. In the early period of syphilitic retinitis, antiphlogistics and resolvents are employed with advantage, especially if symptoms of inflammation be present. When these are absent, the simple fact of impairment of vision in a syphilitic subject indicates the use of a specific treatment—mechanical friction, iodide of potassium, etc. Tonics should be added, if there are threatenings of atrophy of the retina. Under such treatment, patients have almost entirely recovered sight.

5. Cure is no longer possible when atrophy of the retina actually exists. Other nerves than the optic may, when affected, return more readily to their normal state, by reason of their structure being less complicated. If the retina be slightly obscured, but the columnar layer remain intact, there will be only impairment of vision for distant objects.—*British Med. Journ.*, Feb. 10, 1866, from *Gaz. Méd. de Paris*, November 11, 1865.

MIDWIFERY.

42. *Causes of the Position of the Fœtus.*—Prof. von Scanzoni, of Würzburg, sums up a paper on the causes of the frequency of the head-presentation in the human fœtus, with the following conclusions. 1. The frequency of the cranial position of the embryo during pregnancy is not explained by Simpson's theory of reflex movements of the fœtus; nor, as alleged by Dubois, by its instinctive movements; nor by the hypothesis of Carus, according to which the fœtus lives a mere vegetable life within the uterus. 2. The position of the fœtus is dependent on the operation of various circumstances: viz., *a*, the force of gravitation; *b*, the form of the uterine cavity; *c*, the form of the fœtus; *d*, the quantity of amniotic fluid; *e*, the contractions of the uterus during pregnancy and the first stage of labour; and *f*, the active movements of the fœtus. 3. Up to the time when the placenta is developed, the embryo may assume any position, vertical or horizontal, in the cavity. 4. Immediately after the formation of the placenta, the fœtus is suspended at its lower end by a very short umbilical cord to the upper part of the uterus, and the large heavy head hangs downwards. 5. This position may, in favourable circumstances, be maintained during the whole of pregnancy; but much more frequently it undergoes changes into other positions, from which, as a rule, a return is finally made to the head-presentation. 6. The first of the causes influencing the position of the fœtus is the rapid

growth of the umbilical cord, which becomes even longer than the uterus, and thus is no longer capable of retaining the lower part of the body of the fœtus in the upper part of the uterus. 7. The fœtus may nevertheless constantly retain a vertical position with the head directed downwards, since the centre of gravity falls within the large head, and the relatively large quantity of amniotic fluid keeps the fœtus floating until the middle of pregnancy, so that the heaviest part gravitates towards the lowest part of the circumference of the uterus. 8. About the middle of pregnancy, in consequence of the rapid development of the body of the fœtus, the centre of gravity falls from the head to the upper part of the thorax, and changes the gravitative relations of the fœtus. 9. If at the same time, as usually is the case, the uterus grows more in its longitudinal than in its transverse diameter, its walls retain the fœtus in the vertical position; since it has become too long for its long diameter to find room in the transverse diameter of the uterus. 10. But if the uterine cavity become more roomy, the head may be inclined to either side, so that an oblique or even a transverse position may be assumed. 11. As the fœtus increases further in growth, the quantity of amniotic fluid diminishes in proportion to the size of the fœtus, and, if the lateral walls of the uterus be not unusually yielding, the fœtus is compelled to resume a vertical position. 12. If the head have hitherto remained the deepest part, it will be the point which in the perpendicular portion of the uterus comes most readily over the os uteri. 13. When the fœtus lies transversely, the manner in which the child presents depends partly on the resistance of the uterine walls, partly on the active movements of the fœtus induced by this resistance, but especially on the occurrence of contractions in the uterus. 14. In the transverse position, the head generally lies lower than the breech: this, and the circumstance that the centre of gravity of the fœtus lies nearer to the head than to the pelvic extremity, render it plain how, when the pressure exercised by the sides of the uterus on the head and breech of the fœtus becomes troublesome, the head is directed downwards more readily than upwards when the fœtus assumes the perpendicular position. 15. The action of the uterine contractions on the transversely lying fœtus varies, according as the contractions originate in single parts of the uterus or over the whole organ. 16. Partial contractions, as a rule, set in most strongly at the points of the uterine wall which are in immediate contact with the head and breech of the fœtus; they act directly on the fœtus, and, if it be only moderately movable, very readily bring it into the vertical position; and the head, generally lying lower, enters the strait of the pelvis more readily than the breech, the expulsion of which requires a more complicated mechanism than that of the head. 17. The contractions extending over the whole uterus act most directly on the pelvic end of the fœtus, which is usually directed upwards, even in the oblique and transverse positions. If the lower section of the uterus contract powerfully, this circumstance may, in spite of the downward pressure exerted on the breech by the fundus uteri, succeed in bringing the head nearer to the middle line of the uterus and thus establishing a cranial presentation; and this action is essentially supported and favoured by the greater firmness and power of resistance on the part of the fœtal body. 18. If the contraction of the lower section of the uterus be less energetic, and the fœtus be at the same time young, soft, and compressible, the breech, under the simultaneous angular bending of the fœtus, is pressed still more deeply into the abdominal region, the head is pressed still further from the axis of the uterus, and the transverse presentation is thus finally converted into one of the breech or foot. 19. Hence the breech and foot presentations met with in such disproportionate frequency in abortion and premature labour are not primary positions, but are, as a rule, secondary, brought about by the contractions of the fundus uteri. 20. From the observations already made, it appears that the most various influences occurring during pregnancy may give rise to manifold changes of the position of the fœtus, but that nature generally succeeds in bringing the head over the os uteri, where it is usually found lying during the last six or eight weeks of pregnancy. 21. Nevertheless, changes of position are not especially rare even at this late period of pregnancy; and their occurrence is favoured if the quantity of amniotic fluid be great, if the embryonic cavity be roomy, if the uterine walls be yielding, and

the active movements of the fœtus be energetic. The partial contractions of the uterus, which set in more frequently and with greater intensity in the last weeks of pregnancy, also exercise a powerful influence on the position of the fœtus. 22. In entirely normal relations, the deviation of the head after having once entered the pelvis, during the last weeks of pregnancy, is hindered when the quantity of amniotic fluid be remarkably diminished in proportion to the size of the fœtus, so that the size of the amniotic cavity and the mobility of the fœtus is diminished; and also when there is an arrest of the development of the uterine walls, so that the organ is extended by the growing fœtus. But this stretching of the walls of the uterus diminished its yielding power, and, by causing it to envelop the body of the fœtus more closely, renders difficult the occurrence of any important change of position.—*Brit. Med. Journ.*, March 17, 1866, from *Wiener Med. Wochenschrift*, Jan. 20, 1866.

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43. *Tetanus of the Uterus.*—Dr. David Gordon related to the Obstetrical Society of Edinburgh (28th Feb. 1866) the case of Mrs. B., æt. 38, the mother of several children. During her pregnancy she had much bearing-down pain; the abdomen was very pendulous and partially supported on the thighs. The veins of the labia and limbs were varicose. The labour was very tedious. She began to complain of pain about 11 o'clock on a Monday night, and she was not delivered till 3 P. M. on the following Thursday, when Professor Simpson applied the forceps, and without much difficulty extracted a living child. To obtain a thorough examination, the patient was deeply chloroformed, and the hand was passed into the vagina through the brim, and fairly beyond the head of the child. The obstructing cause was then discovered. Firmly inclosing the neck of the child there was felt a broad and strong band of uterine fibres in a state of tonic contraction, which effectually prevented the passage of the shoulders through it. Several moderate pulls with the forceps, during the intervals between the pains, sufficed to overcome this obstruction, and delivery was speedily accomplished with perfect safety to mother and child, both of whom have done well. After the birth of the child there was a sharp attack of flooding. In removing the placenta the cord broke, and it became necessary to introduce the hand. The whole of the membranes remained in the uterus, and their removal was very troublesome. The flooding continued for some time, notwithstanding the vigorous use of cold and pressure. It appears to me that this case illustrates very clearly the great utility of chloroform in midwifery practice. Without the aid of such an agent it would have been impossible to make the thorough examination in the course of which the contracted and obstructing band of uterine fibres was discovered encircling the neck of the child and preventing its descent. It also shows that in skilful hands forceps may be applied to the head above the brim and fairly within the cavity of the uterus, without injury to mother or child. And I am confident that the practice, in such circumstances, is much safer than that of turning. This case also reminds us that when labour is retarded by the special cause indicated, the extracting force must not be applied as usual during the pains, but in the intervals between the pains.—*Edinburgh Medical Journal*, April, 1866.

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44. *Hemorrhage from the Uterus.*—Dr. Barnes stated, at a meeting of the Obstetrical Society of London (Feb. 7, 1866) that he continued the practice of injecting a solution of perchloride of iron into the uterus to arrest hemorrhage after abortion and labour, and with excellent effect. He no longer dreaded flooding as of old. So far he could illustrate by experience the safety of intra-uterine injections. But he thought a more desirable method of applying fluid styptics or caustics to the inner surface of the uterus would be by swabbing—that is, by soaking a bit of sponge or cotton-wool in the liquid, and passing it into the cavity. He had contrived an apparatus for this purpose. An excellent plan of applying solid nitrate of silver was one he had learned from Sir Benjamin Brodie. That eminent surgeon dipped a silver probe in fused nitrate of silver, thus obtaining a thin stratum, which could be passed freely and safely into a sinus. This was the safest way of cauterizing the inner surface of the cervix or body of the uterus.—*Med. Times and Gazette*, March 24, 1866.

45. *Enlargements of the Uterus which follow Abortions, Premature or Natural Confinement.*—Dr. SNOW BECK, in a paper on this subject read before the Obstetric Society of London (Feb. 7, 1866), remarked that these enlargements had been long recognized by pathological anatomists, and quoted some microscopical observations by himself, and communicated to the Medical Society of London in 1851, which showed that the pathological condition essentially consisted in an enlargement of the muscular tissue of the uterus, without the presence of any inflammatory or heterologous deposits. The causes were considered to depend chiefly upon—(1) a want of complete and persistent contraction of the uterus, which permitted an increased circulation of blood in the gravid organ, and interfered with the changes which took place after parturition; and (2) on the partially developed state of the uterine tissue in abortion, which appeared to be unfavourable to the development of those changes necessary to its complete reduction in size. The enlargement of itself gave rise to few and comparatively slight symptoms, unless it existed to such an extent as to be felt as a tumour in the hypogastrium: but it rendered the patient liable to profuse hemorrhages, coming on suddenly and without appreciable cause. These enlargements might exist for many months, or even for some years, without any symptoms of importance; but from the recurrence of the catamenia, or other causes, congestion of the enlarged organ was gradually induced; or congestive inflammation, which may be either of the whole or of any portion of the uterus, might take place, the usual symptoms of uterine affection being then present. Amongst the subsequent changes which took place were anteversion and retroversion, with more or less bending of the organ, which lesions interfered with subsequent impregnation. But a more important change was a gradual hardening of the organ, which reduced it to an indolent state, and rendered it very rebellious to treatment. The modification of the symptoms thus produced was shown by the cases recorded, and the physical examination of the organ detailed. The author found that in these cases the uterus was equally enlarged, smooth, pyriform, the cavity enlarged, and the orifice open. The sound readily passed to an extent varying from three to five or six inches. When inflammation was added the organ became tender, the arteries were felt to beat with more or less force, and the interior became very sensitive. Subsequent and various alterations were made; the lips became enlarged, often lobulated, projecting into the vagina, red and raw in appearance, and bounded by a distinct line, which marked the division between the mucous membrane of the vagina and that of the uterus. It was this condition of the organ which had been so frequently described as ulceration, although no such morbid change actually existed. With respect to the treatment, various cases were recorded showing the importance of injecting the cavity of the uterus with astringent lotions, and the safety with which it could be done, provided the actions of the uterus were perfectly quiescent. The cavity of the uterus being enlarged, and the orifice open, impregnation readily took place, and the physiological changes which followed were decidedly the best means of restoring the organ to the healthy state. Congestion or inflammation, when present, would have to be met by the usual means; and when the uterus was in the hardened, modified condition, in addition to the ordinary means of treatment, it would require some local stimulant to rouse the local action, and enable the other remedies to act. For this purpose cauterizing the lips with potassa cum calce had been generally employed.—*Med. Times and Gazette*, March 24, 1866.

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46. *Epithelial Tumours of the Cervix Uteri.*—M. CORNIL remarks on the difficulty of making a diagnosis, by pathological characters, between true cancer and epithelioma of the cervix uteri; and inquiries whether it may not be possible to found an arrangement of the tumours, on such elements of diagnosis as the arrangement of the epithelial cells. In some tumours, the cells are arranged like the acini of glands; and M. Robin calls these tumours heteradenic, and divides them into three varieties, of which M. Cornil retains one, classing the tumours comprised in the two others according to the form of their stroma and epithelium. From an examination of fifty-five cases, he has made the fol-

owing classification: 1. Heteradenic tumours (M. Robin's third variety with or without epidermic globules=18 cases; 2. Epithelial tumours with alveoli visible to the naked eye and cylindrical cells=3 cases; 3. Epithelial tumours having a network of fine meshes and cells of very various forms (the prismatic form predominating)=34 cases.

The following is a succinct account of the characters of these varieties.

1. *Heteradenic Tumours.* The lips of the os uteri—sometimes one alone—are swollen, sometimes everted, and irregular. The tumours are whitish and somewhat transparent, friable under the pressure of the finger, and having a consistence between that of scirrhus and that of encephaloid; on section, the surface is smooth, and presents no milky juice, but yields on pressure small coagula, or white opaque vermiform filaments one or two *millimètres* (sometimes even a *centimètre*) in length, which proceed from cylindrical cavities visible to the naked eye. These filaments are sometimes disposed without order, sometimes parallel, or radiating like a fan in the large projecting *bourgeons* of the tumour. Under the microscope, a section made parallel to the direction of the filaments shows a number of elongated tubes, anastomosing like the tubules of glands, enlarged at parts, and ending in one or more ramifications; these tubes are separated by a thin layer of areolar tissue, or of uterine muscular tissue, and have no special external membrane; they are comprised of cylinders formed of prismatic or pavement nucleated cells, agglutinated by an amorphous granular matter, these cells entirely filling the tubes. When the tubes are cut transversely, they present epithelial cells implanted in a radiating manner in their walls. As to the origin of these nucleated cells, M. Cornil observes that they do not spring from pre-existing glands; and believes that they arise spontaneously, producing in the adult an abnormal gland-formation analogous to that which is physiologically formed in the embryo. As this process of development goes on, the parts first formed undergo certain changes, consisting principally in vesicular, fatty, or epidermic degeneration of the cells, followed by disintegration and ulceration, and finally by putrefaction or gangrene of the tumour.

2. *Epithelial tumours with visible alveoli and cylindrical cells* are characterized by the presence of alveolar cavities, generally visible to the naked eye, hollowed in the pre-existing tissues, and filled with cylindrical epithelial cells. The tumours are soft, friable like encephaloid, and yield on pressure a milky juice, miscible with water. They differ from heteradenic tumours in the presence of fluid, in the absence of tubes and of globular epidermic cells, and in the characters of the alveoli; they are distinguished from encephaloid by the presence of cylindrical cells and by the presence of newly formed alveolar tissue.

3. *Epithelial tumours having a network of fine meshes and cells of various forms, principally prismatic.* This is the most common variety of epithelial uterine tumour. It presents to the naked eye the characters of encephaloid; and, microscopically examined, differs from the two varieties already described, in the formation of a layer of connective tissue, supporting the vessels and forming alveolar cavities, generally microscopic, and filled with epithelial cells. These cells are free, and may be removed, in the form of a milky fluid miscible with water, by pressure, or by scraping a section of a tumour with the back of a scalpel. The elements found in the fluid are: 1. Ovoid nuclei of greater or less size, having a thick membrane and a large nucleolus—these are considered, by those who hold that the elements of cancer are specific, as characteristic of carcinoma; 2, prismatic cells containing ovoid nucleus, and generally also a nucleolus; 3, fibro-plastic cells; 4, spherical cells containing large nuclei; 5, mother-cells with several nuclei, etc.; 6, cells undergoing fatty degeneration; 7, white globules.

M. Cornil has never observed the disease to become generalized in the first two varieties, while he has noticed it to do so in five cases of the third. Independently of such results as peritonitis, inflammation of the bladder and urethra have been amongst the most frequent complications. In six cases out of thirty-two of the third variety, tubercular disease of the lungs was also present.—*Brit. Med. Journ.*, Sept. 23, 1865, from *Journ. de l'Anat. et de la Physiol.*

HYGIENE.

47. *Means for the Ready and Simple Purification of Water.*—Mr. THOMAS SPENCER has discovered that the black oxide of iron frees water from nearly all its organic impurities. He was led to this discovery by studying the natural purification of water during its percolation of the soil. He found that sands which contained the black or magnetic oxide of iron purified the water which was filtered through them, and that sands which did not contain this substance had no appreciable effect.

Magnetic or black oxide of iron as obtained for medicinal purposes is unsuited for use, not only on pecuniary grounds, but because of its finely-divided state. By heating native carbonate of iron, or spathose iron ore, magnetic oxide is obtained in a suitable condition, but not cheaply enough for application on the large scale. Mr. Spencer obtains it by heating together hæmatite, or red oxide of iron ore, with sawdust. The oxide as made by his process contains a small percentage of carbon. The use of this carbon is, he states, to render the substance harder and less brittle.

In the state in which it is used it is in the form of coarse black grains, which are strongly attracted by a magnet. Its commercial name is "magnetic carbide."

Now, if ordinary river water, even the more impure kinds of it, are made to percolate a layer of magnetic carbide some inches thick, it is not only filtered, as it would be by passing through a similar layer of gravel or sand, but *it is deprived of much of its soluble organic impurities.* According to Mr. Spencer, water containing several grains of organic matter by filtering through a sufficient layer of magnetic carbide loses nearly the whole of it, containing, after its filtration, only about half-a-grain or less of organic matter. The effects of passing the water supplied by the London companies through a domestic filter containing a layer of this substance is certainly very striking. In a few minutes the water passes through the filter, and when compared with some of the water which has not been purified in this way a great difference is observed. Not only is it remarkably bright, but it is found to have lost its previous yellowish colour, and to be free from smell or taste of any kind. But more than this, if a few drops of solution of permanganate of potash are added to the water, the pink colour thus given to the water will be found to be unchanged when the water, which has not been purified by this process will have wholly destroyed the colour of permanganate of potash similarly employed.

Lastly, the crowning property of the black oxide of iron, or magnetic carbide of Mr. Spencer, is that it suffers no perceptible diminution in its power by time and use. In the waterworks at Southport, in Lancaster, it has been in use for seven years without showing any diminution in power, and in domestic filters in use for the same period the same is stated to be the case, although the purifiers have not once been cleansed or refitted. With a filter which Mr. Spencer stated had thus been in use the effects upon water were as striking as in one newly fitted.

Another way in which water may be purified, probably well known to most of our readers, is that of Mr. Condy. The solutions of permanganate of potash and other bases when added to water soon oxidize organic matters, sulphuretted hydrogen, and other oxidizable bodies which may undesirably be present in water. The quantity necessary for the purpose is so exceedingly small that the alkali introduced into the water is of no importance, while the manganese is converted into hydrated peroxide of manganese, which gradually settles down or may be removed by filtration. The permanganate should be added to the water in as large a quantity as the water can deprive of its pink colour on standing for two or three hours after it has been added.

By one of these ways, by using Mr. Spencer's purifying filter or by adding a little of Mr. Condy's solution of a permanganate, and subsequently passing the water through a common filter, those who appreciate the hygienic importance and the luxury of pure drinking water can easily supply themselves with it, albeit the water may have to come from the Thames or other stream similarly polluted.—*Med. Times and Gaz.*, April 28, 1866.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

48. *Poisoning by Petroleum.*—Dr. Mayer, of Antwerp, relates a case of poisoning by a glass of petroleum, which was drunk in the dark by mistake for a glass of beer. About half an hour afterwards Dr. Mayer found the patient pale, restless, with sunken eyes, strongly contracted pupils, the irides insensible to light, hot dry skin, weak voice, and short quickened respiration. The pulse was excited, hard, incompressible, 60 in the minute, and afterwards fell to 48. (The ordinary number of pulsations in health was 80.) The patient complained of an indescribable feeling of *malaise*, great anxiety, and a sensation of constriction at the diaphragm and in the pharynx. Consciousness was undisturbed. The breath had no odour of petroleum. In spite of the administration of tartar emetic and of tickling the fauces, no vomiting occurred; neither feces nor urine were discharged. After the epigastrium had been rubbed with a flannel dipped in eau de Cologne the patient had eructations, smelling strongly of petroleum, and afterwards vomited copiously undigested food, having the same odour, immediately after which an improvement took place; the pulse became quicker, the skin warmer, the pupils dilated, and the sensibility of the iris to light returned gradually. The vomiting recurred frequently, and always with an odour of petroleum; the patient had a copious stool, slept well through the night, and was quite well the next day. The urine, throughout the whole of the next day, still had a marked odour of violets.

Dr. Mayer remarks that the petroleum appears to have produced total paralysis of the stomach and alimentary canal, so that emetics had no effect, and the food, which was vomited four hours after the poison was taken, showed no traces of digestion. It was only through the stimulation produced by rubbing the epigastrium that vomiting was excited. The retardation of the pulse Dr. Mayer ascribes to the anæsthetic action of the petroleum, which action also shows itself locally in the anæsthesia and paralysis of the digestive canal. The recovery of the patient from so large a dose of the poison may in great measure be attributed to the circumstance that he had previously had a full meal, which thus prevented the petroleum from exerting all its action on the stomach.—*Journal de Bruxelles*, May, 1865.

A case of poisoning by petroleum is recorded also in the *Journal de Chimie Méd.* The patient drank a small glassful of petroleum in a cup of coffee. The symptoms and result are not given. Cases of poisoning by petroleum have been recorded by Weinberger (*Schmid's Jahrb.*, cxxi. 34) and by Clemens (ibid., cxxv. 294).—*Brit. and For. Med.-Chir. Rev.*, April, 1866.

49. *Poisoning by Water-hemlock.*—Dr. Lender relates a case in which three boys ate of the roots of water-hemlock. In one vomiting set in, by which further symptoms were prevented. The second, who had eaten but little, vomited after some time, and became faint and unconscious, but had no very severe symptoms. The third, who had eaten most, vomited in about an hour; he became insensible and convulsed generally; his respiration became stertorous, and water, tinged with blood, flowed involuntarily from his mouth. Death followed, about three hours after the first appearance of the symptoms. At the *post-mortem* examination the vessels of the brain were found to be remarkably full of blood; there was about an ounce and a half of bloody serum in the pleuræ, and a singular effusion in the pericardium. The costal pleura was injected of a bright red colour; the lungs were hyperæmic, and the trachea and bronchial tubes were injected, of a bright red, and contained reddish mucus. The mucous membrane of the stomach and duodenum was of a dirty dark-red colour, but with spots of injection; the liver, spleen, kidneys and pancreas, were hyperæmic.—*Ibid.*, from *Viertel-Jahrschr. für Gericht. Med.*, 1865.

50. *Poisoning by Atropia.*—The following case, related by Dr. v. Schmid (*Klin. Monatsbl. für Augenh.*, 1864), is worthy of record both on account of the serious nature of the symptoms, and with reference to the remarkable efficacy

of subcutaneous injections of morphia. On the morning of the 16th January, the author was called to a man, who, an hour previously, had appeared in perfect health, but now spoke indistinctly and deliriously, although still capable of giving correct answers to questions. He found the patient in a state of fearful excitement, kneeling on his bed, with his head bent down and pressing it into the pillow, as if looking for something. The patient did not appear to recognize him; the tongue was swollen, and projected between the teeth; he incessantly moved it and his lips in a stammering manner, but without emitting a single intelligible word; the eyes were staring; the head was very hot, and the countenance livid; the superficial veins were extremely large, prominent, and serpentine; the pupils were dilated to their utmost degree, and unaffected by light; the pulse was 130, full, and very strong; there was a constant desire, but without the power, to make water; the region of the bladder was very sensitive; there were erections and erotic motions. It took five powerful individuals to place the patient on his back, and keep him in that position. Blood was drawn freely from the arm, and cold lotions were applied to the head, but without any result. Half an hour later some spoonfuls of infus. sennæ co. were administered, but were only in part swallowed after great exertions on the part of the patient. After another half-hour, during which the excitement continually increased, and the restlessness had become so great that it was no longer possible to hold him, a fifth of a grain of the acetate of morphia was injected into the cellular tissue of the right temple. In ten minutes he was perfectly quiet, the pulse became smaller, but not slower, and clonic spasms of the extremities appeared. The forearms were rapidly pronated or supinated, and at the same time adducted; in the lower extremities there were twitchings of the muscles. In three-quarters of an hour the pulse was so small that a little wine was administered; it was swallowed with greater ease than the senna mixture; the speech was now more distinct; the feces and urine were involuntarily discharged. The action of the morphia lasted for about an hour; then the wakeful intervals became longer, the slightest noise awakened the patient and excited restlessness; the pulse again rose. As after about two hours the excitement, restlessness, and anxiety had again attained almost their former height, a quarter of a grain of the acetate of morphia was injected into the left temple. The effect was very striking: in seven minutes perfect calm had replaced the greatest excitement; in a quarter of an hour the pulse became smaller, and for the first time slower (120). The patient was awakened only by pressure over the bladder, which did not, however, appear to be distended. During this period the breathing was normal; the patient occasionally changed his position, opened his eyes, looked around, and again fell asleep; the pulse was 110 an hour after the injection. After passing two hours quietly, the desire to make water seemed to awake him, for he at once demanded a chamber-pot, and passed without difficulty, but with two slight pauses, about ten ounces of apparently normal urine. He now recognized the people around, asked many questions in a clear voice—although he still sometimes rambled—was very thirsty, but as soon as the latter desire was relieved by ice, again slept. The glowing heat of the head and body had disappeared; the pulse was, two hours after the injection, 100 and small; the pupils continued in their previous dilated condition. He passed the evening and following night in sleep with a few interruptions, which were sufficiently explained by the desire to pass water, and by four fluid motions. The twitchings of the limbs continued through the night, and to a very slight degree through the next day. The pulse gradually sank till the next morning, when it was 55. His intellect then appeared restored, except that the memory was still somewhat deficient: the latter returned during the day. There then remained only extreme weakness, dryness of the throat, slight twitchings of the limbs, and the dilated pupils. It appears that he had taken at 7.45 in the morning from one-sixth to one-fourth of a grain of atropia in solution.—*Ophthalmic Rev.*, Jan. 1865.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

On the Internal Use of Chloroform in Intermittent Fever. By E. McCLELLAN, M. D., Asst. Surgeon U. S. A.

THE strong testimony adduced by Dr. Merrill, in this Journal for October, 1865, in favour of the free use of chloroform as an internal remedy, induced the experimental treatment of a number of cases of intermittent fever with it at Fort Delaware, the results of which are so satisfactory that I feel impelled to add the following account of them to the mass of evidence already accumulated on the subject.

So early as 1832, chloroform was recommended in the treatment of asthma and scarlet fever; since which date it has been from time to time suggested in the treatment of a great variety of diseases. The Dublin hospital reports abound in the record of cases treated with it; and the medical journals for 1854, especially, present such cases in great variety. In the *American Journal* for January of that year, the first extended observations on its internal use were published by Dr. Henry Hartshorne, of Philadelphia. In this paper he so accurately details the *symptoms* and *sensations*, with the *effects* produced by the internal use of this remedy, that, in addition to its merits as the first practical essay on this subject, it leaves very little opportunity for improvement or further observation.

In 1850 chloroform was asserted by Dr. Delioux, of Rochefort, to possess antiperiodic properties. He states, as his experience, that its power is considerable though inferior to that of quinia or arsenic. Although this opinion seems to have been confirmed by the reports of several gentlemen, there is no record of any extended observation made at the time to satisfactorily determine the fact; the reports, therefore, of Dr. Merrill are of great value in determining its specific action when administered during the cold stage of intermittent fever.

In the series of trials of which this paper is the record, it was determined to follow the plan recommended by Dr. Merrill. Chloroform was therefore administered, in all cases, in its pure state, the patient being directed to throw the liquid far into his mouth and to follow it immediately with cold water. In this procedure, alone, does the writer's experience differ from that of Dr. Hartshorne, who recommends that it be largely diluted; but though used as before stated, in no instance did any unpleasant results occur from its contact with the mucous surface. The dose given was a fluidrachm, and was administered as early after the occurrence of the chill as practicable. The immediate effects of its exhibition were, an agreeable sensation of diffused warmth; the subsidence of all pain; the termination of the chill in from eight to fifteen minutes; a refreshing sleep of from one to three hours' duration; and the entire absence of physical prostration, and other distressing sequelæ of the ordinary paroxysms of this disease. In the majority of the cases treated, one fluidrachm was sufficient to produce the full effect; in a very few, one or more repetitions were required at short intervals. The majority of the cases treated were of the tertian variety, but few cases of quotidian having occurred.

The garrison of Fort Delaware, consisting of Batteries "K" and "L" 4th U. S. artillery, furnished sufficient material to test this mode of treatment. Company "K," having served as a light battery in the army of the Potomac, the officers and men were, from the commencement to the termination of the late war, exposed to the malarial influences of the country so often traversed by that army. Upon the cessation of active hostilities, this company was placed in garrison duty in one of the temporary fortifications on the Potomac. Here, in a very short time, the majority of the men were down with intermittent fever. Company "L" having served for three years in the tide-water districts of Virginia, and after the evacuation of Richmond, as a portion of its garrison, the men had suffered severely with the same disease. In October, 1865, these companies became the garrison of this post, and the appended cases were taken from the hospital records.

CASE I. Private R., Co. K, was admitted to hospital October 29, 1865, upon which day he expected the occurrence of the paroxysm. The nurse was directed to notify me immediately upon the attack. I found him in bed, shivering, complaining of severe headache and pains throughout his body—the cold stage fully established. A teaspoonful of chloroform was administered. In a few minutes he experienced an agreeable internal warmth; the surface of his body became less cold, and in seven minutes the chill had subsided; this was followed by a sound sleep of two hours' duration. When he awoke he was, with the exception of a slight headache, perfectly well. A purgative dose of blue mass and colocynth was exhibited, followed by the free use of quinia, which completely arrested the disease.

CASE II. Private L., Co. K, was admitted to hospital November 2, 1865. This patient had suffered from intermittent fever at intervals during the preceding three months. He was emaciated and debilitated, liver torpid, spleen enlarged. He had been repeatedly under medical treatment, but without any lasting effect. On the 3d of the month I found him in a severe chill, which had then lasted for some time. His physical appearance was that of one in a state of collapse; he complained of intense pain, especially in the abdomen; his skin was cold and shrivelled; his pulse was depressed. A fluidrachm of chloroform was administered; in five minutes his pulse became fuller, his breathing less laborious, and the pain of which he complained was subsiding; in fifteen minutes from the first dose—the chill continuing—it was repeated. By this the chill was promptly arrested, and in a short time he was in a sound sleep which lasted for several hours, during which his rate of pulse and external heat were but slightly above the normal state. When he awoke, he was perfectly relieved, and without the nervous prostration from which he had before suffered severely. He was placed upon a stimulating diet and upon quinia; under this he remained free from the disease until the 21st of the month, when, having imprudently exposed himself, he was again received in hospital in the first stage of the paroxysm. A teaspoonful of chloroform was again administered, and in ten minutes the chill was completely arrested. He remained under treatment until December 9, when he was returned to duty, having no recurrence of the chills.

On the 29th of December he was again admitted, and again the chill yielded to the influence of one dose of the chloroform. He was placed upon quinia and small doses of opium at night. This was continued for

twenty days, when he was returned to duty and has since been free from an attack.

Case III. Corpl. R., Co. K, was admitted November 13, having suffered for two months with intermittent fever. The paroxysm was a mild one, a teaspoonful of chloroform in seven minutes completely arrested the chill, and in one hour the paroxysm had subsided. There was no reappearance of the disease until May 22, 1866, when during an absence from the post on a pass, he was, as he reports, taken with a chill, and was confined to his bed by the attack for ten hours. On the 24th having returned to his company and being on guard, he was, at 11 o'clock A. M., again attacked. When brought to the hospital he had been but a very short time in the cold stage. A fluidrachm of chloroform was administered, the chill gradually subsided and in twenty-three minutes was arrested. The patient, after a sleep of two hours, was perfectly recovered and has since had no return. On this last occasion the dose was not repeated, in order to note the gradual reaction produced by the remedy.

Case IV.—Corpl. S., Co. K, who was admitted on the 28th of May, had the previous day a severe paroxysm of intermittent fever, attended with great prostration, excessive vomiting, &c, and from the effects of which he had suffered for nearly twelve hours before my attention was called to the case. He was so much prostrated as to be confined to his bed during the 29th, and every precaution was adopted, if possible, to prevent the repetition of the chill on the following day. At 8 o'clock A. M. on the 30th he was again attacked; the chill commencing without any premonitory disturbance, and being attended with all the signs of violent congestion. A fluidrachm of chloroform was administered, which, however, was ejected from the stomach in a few moments; nausea and vomiting having been the earliest symptoms of the attack. In fifteen minutes, no cessation of the chill having taken place, the dose was repeated and partially relieved the nausea and vomiting. In twenty-five minutes, the chill continuing, the dose was again repeated and was followed by the subsidence of the chill. The febrile symptoms came on with vigour. The pulse became full and the eyes suffused. He complained of great headache, no desire to sleep, an inability to compose his mind, great restlessness and a constant sensation of nausea. These symptoms continued for upwards of two hours, after which they gradually subsided. He became composed and his mind hopeful, the only remnant of his late attack being a slight nausea coming on at intervals. The repeated doses in this case produced no inclination to sleep, nor did he experience, beyond the nausea, any of the other symptoms which often follow the excessive use of narcotics. In the evening of the same day he was dressed and moving around the ward. He was placed on full doses of quinia during the subsequent twenty-four hours. On the morning of May 31st, another paroxysm appeared accompanied with the same aggravations as in the previous attacks, though with a marked diminution in their severity. A fluidrachm of chloroform being administered, the effect was prompt and most satisfactory. In twenty minutes the chill was arrested; the patient was shortly in a sound sleep, from which he awoke with no other traces of his illness than nausea and headache which lasted for several hours. This paroxysm was followed by a slight attack of gastritis, which yielded readily to treatment. He was again placed upon the use of quinia; and the disease has been thus far arrested.

Case V.—Private H., Co. L, who had been subject at intervals during the

past eighteen months to returns of intermittent fever, was admitted May 26, while under the influence of a chill which had commenced at 10 o'clock A. M. A fluidrachm of chloroform was administered in twenty minutes after the onset of the rigors. The chill was arrested in a few minutes, and the paroxysm had disappeared at 12 o'clock M. On the 27th he was again attacked, the chill occurring at 9.30 A. M. He was treated as on the previous day, and at 10 o'clock A. M. the symptoms had entirely subsided. On the 28th the chill recurred at 11.35 A. M., and under the same treatment had disappeared at 12 o'clock M. In this case the chills were decided in their characteristics, although of no severity; and it is notable that in each of the three attacks the second and third stages of the paroxysm seem to have been obliterated by the action of the chloroform.

CASE VI.—Lieut. S. attached to Co. K, who had served for several years as an officer of the English army in India, where in 1851 he had several severe attacks of intermittent fever, was seized with a paroxysm October 22d, 1865. His case presented the usual aspect of the disease, but of no unusual severity. A fluidrachm of chloroform was administered; in twelve minutes the chill had subsided, and the patient was in a sound sleep which lasted about three hours. When he awoke, the attack was exhausted. After a free use of quinia the patient remained exempt from the disease until May 20, 1866, when he was again attacked; chloroform was administered with the same results, since which time he has not suffered any trace of the disease.

CASE VII.—Private T., Co. L, had been subject to intermittent fever for four months previous to his admission, April 30, 1866. This man was much debilitated by tertiary syphilis, for which he had been under treatment a length of time. On the 31st the chill began at 4 o'clock A. M.; a fluidrachm of chloroform having been administered, the chill disappeared in ten minutes. During the sleep which followed, the febrile stage occurred with much severity; but, upon the subsidence of the fever, the patient awoke free from all unpleasant symptoms.

In all, thirty-two cases of intermittent fever have been treated with the internal use of chloroform. Those reported are the only cases which have presented points of any interest beyond the cessation of the chill at from five to fifteen minutes after the exhibition of the remedy. In no instance have the slightest unpleasant results appeared. My experience in this respect accords with that of Dr. Hartshorne, that the internal use of chloroform is not attended with the dangers which sometimes attend its inhalation, and that it is a narcotic of the mildest, and yet most powerful character.

The argument afforded, in behalf of chloroform as a remedy in intermittent fever, by the consideration of the reported cases of Dr. Merrill and of the results of its employment in the cases here described, is not that chloroform exerts any antiperiodic influence upon this disease. It is that, without depressing or deranging the nervous force, the internal use of chloroform distributes the effect of this antispasmodic agent on the nerve centres, and thereby obviates for the time the depressing influences of the disease. Hence the benefits derived by the patient are,

1st. That it materially shortens the duration and abates the depressing action of the paroxysm.

2d. That, by being delivered from the physical prostration which must otherwise accompany the attack, the patient is rendered more amenable to treatment for the radical cure of the disease.

Case of Erysipelatous Laryngitis; Laryngotomy; Recovery. By Wm. J. Wilson, M. D., M. R. C. S. Edinb., late 13th Ohio Vol. Cavalry, &c., of Macon, Mo.

Col. J—— M——, æt 36, married, of sallow complexion, and having the appearance of a constitution broken down by malarious diseases, was attacked on 13th Dec. 1865, with inflammation of left tonsil. Next day I was called to see him and found considerable external swelling over that tonsil and extending for some three inches down that side of the neck. Internally the tonsil was swollen and of a deep vivid red colour. There was acute pain on pressure and in swallowing, but no difficulty of breathing. Some fever also existed, with a general feeling of malaise. Pulse 96, full and hard. I prescribed hydrarg. submur. gr. vj, immediately followed every two hours by a tablespoonful of the following mixture: R.—Antim. potass tart. gr. iij, sulphat. magnesiæ ℥j, aquæ menth. pip. ℥viij. M. I also directed the application of mustard to his throat and the inhalation of the steam of hot water.

Next morning, the 15th, I found him much better, the swelling continuing about the same, but now there was very little pain on pressure or in swallowing. The medicine had operated freely, and together with the inhalation of the steam has caused a copious perspiration. Prescribed the following gargle: R.—Aluminis ʒiss, tinct. capsici ʒiss, mellis despum. ℥j, aquæ ad ℥viij. M. ft. gargarisma—sæpe utend.

On my visit on 16th I found him worse. The external swelling had almost disappeared; the inflammation seemed also to have left the tonsil, but there was now considerable hoarseness and difficulty of breathing. I ordered spt. turpentine to be applied on flannel to his throat, which gave some relief. Saw him again at 1 P. M., when the dyspnœa had increased, but was apparently relieved by the inhalation of steam and the application of turpentine externally. At 5 P. M., finding the dyspnœa still increasing, I sponged the fauces and root of the tongue with a solut. nit. argenti (ʒj ad ℥j). This did very little if any good, and at 6½ P. M. I was sent for with the intelligence that he was dying. I endeavoured to obtain the professional advice and assistance of my friend Dr. E. C. Still, of this place, but he was not at home. On visiting my patient I found him breathing with such difficulty that he evidently could not exist for another half hour without relief. I immediately proposed laryngotomy, which was at once acceded to, and I performed it by making a longitudinal incision 1¼ inch in length over the cryco-thyroid membrane, and dividing the skin, superficial fascia and platysma. I then changed the position of the knife and pushed it horizontally into the trachea through the crico-thyroid membrane. Considerable hemorrhage ensued, but the relief was instantaneous, the air freely rushing in and out through the wound. Dr. Still having at this time arrived, with his assistance I introduced a pair of forceps into the opening and by separating the blades was enabled to insert a tracheotomy tube. The effect of the operation was seen in a few minutes, as in that time he breathed so easily as to be able to lay down in bed. Being rather nervous and in dread of suffocation, he only obtained about two hours' sleep during the night, but next morning felt so well that he was evidently out of danger. The tube was kept in his throat till the morning of the 19th, when finding that he could breath quite easily with the tube closed by his finger, I removed it and closed the wound by strips of isinglass plaster; these I next day changed for a pretty thick coating of collodion, which by its contraction on evaporation drew the edges of the wound closely in con-

tact and it healed readily in a few days. An erysipelatous rash at this time began to appear, spreading from the wound, over the right side of neck, head, and forehead. This was painted with tinct. iodine; and the carbonate of ammonia in fluid ext. cinchona was administered internally, when this rash soon disappeared. A rather troublesome attack of neuralgia of the right frontal nerve followed, which was some little relieved by quinia and tinct ferri mur.; but this being changed to a mixture of quinia and strychnia, he soon recovered, and in the course of three weeks after the operation was able to attend to his ordinary business, and has since continued perfectly well.

This case from the very first I now look upon as one of erysipelatous inflammation—beginning as an erysipelatous inflammation of the tonsil, suddenly disappearing and attacking the larynx, producing that affection described as "erysipelatous laryngitis." This diagnosis is confirmed by the previous bad constitutional habit of the patient, the sudden disappearance of all inflammation, and external swelling from the tonsil, and the occurrence of the erysipelatous attack afterwards. Had I even imagined the disease at first to be of an erysipelatous nature, my treatment would have been a different one to the antiphlogistic course pursued, but it was only on the 16th that the larynx began to be affected, and the symptoms crowded one another so closely that day that the operation was urgently called for. Having made up my mind as to its necessity, I did not hesitate for a moment, well knowing that time was invaluable, and that in ten or fifteen minutes more the lungs would have become so much engorged that they would not have been able to recover themselves after the operation. I was forced to the conclusion in this case that all the remedies mentioned in the different text-books, with the exception of laryngotomy, are useless, and worse than useless, as valuable time is lost in their employment.

Laryngotomy is by no means a dangerous operation, provided it be performed before the lungs become much engorged, and should another similar case present itself, I should, the moment I satisfied myself of its nature, and saw the breathing becoming more difficult, propose the operation at once as the only treatment on which the least reliance can be placed. In no one of our authors is there much said about the mode of healing the wound left after the operation. I think no substance can be employed with more satisfactory results than collodion, as it draws the edges of the wound closely together by its evaporation and contraction and maintains them in contact, and it does not absorb any of the mucus which may escape or be forced through the wound.

Sycosis Menti cured by the Sulphite of Soda. By CHARLES M. MATSON, M. D., of Brookville, Jefferson County, Pa.

C. M——, aged 24, consulted me, January 11, 1866, for *sycosis menti*, which extended over his chin, the sides of his face, and upper lip. Having noticed, a short time before, the case reported in the January No. of the *American Journal of the Medical Sciences*, 1866, by Dr. Dale, cured by sulphite of soda, I determined to further test the efficacy of the sulphite in this obstinate disease. I used Dr. Dale's prescription—Soda sulphit. gr. xl, aquæ ʒij, glycerinæ ʒj—and so rapidly did the cure follow that in eight days not a trace of the disease was discovered. It is now three months since the cure was effected, and up to this time there have been no symptoms of a return.

Chronic Diarrhœa of Nine Years' Duration cured by Strychnia. By CHARLES C. SHOYER, M. D., of Leavenworth, Kansas.

D. P——, a merchant, had from three to nine passages daily; they were liquid, feculent, and of good colour He had little or no control over the sphincter, and his feces were frequently voided into his pants; so frequently was this the case that he was obliged to forsake society in a measure; he could not pass flatus without also voiding feces. His health suffered greatly, though his appetite was good at times. He could never defer an evacuation a moment, day or night. Viewing the case as depending upon a loss of tone in the muscular wall of the intestines, I determined to try strychnia, and gave it as follows, until its physiological action became apparent, premising that I also gave quinia and iron to build up the system: ℞.—Strychniæ gr. j, acid. acetic. gtt. x, alcohol ℥ss, tr. cinchonæ c. q. s. ut ft. ℥ij. S. a teaspoonful three times a day. Before ten days the number of evacuations was reduced to three or four a day; the patient had recovered complete control of the sphincter; as, for instance, being in bed about 10 P. M., he felt an inclination for stool, and restrained it without effort until next morning at 8 A. M. In less than eight weeks the cure was perfect, and the patient has taken no medicine for upwards of four weeks and has only two evacuations daily of good consistence; attends to his business, has a good appetite, and has gained considerable flesh. The remedy was pushed until its physiological effects were evident, and continued so until the case was completed. I have more voluminous notes of the case, but as they in no way alter the above history, do not trouble you with them.

P. S —The patient is thirty years old, and attributes his disease to taking drastic cathartics for constipation.

Intra-Orbital Aneurism treated by Compression. By CLARKSON FREEMAN, M. D., President of the Halton Medical Association, Milton, Canada West.

March 1st, 1861, I was consulted by Wm. Elliott, æt. 61 for an aneurismal tumour situated within and on the inner or nasal side of the left orbit, characterized with a distinct whizzing bruit and also a strong pulsation when the finger was pressed against its elastic or cyst-like envelope. About November, 1860, he states he had a pain in the under part of the eyeball, which soon disappeared and gave no trouble until the first of January following, when both eyes became swollen, with pain in forehead, and left nostril has been stopped up ever since. There was a uniform swelling around the left eye only until some time in February, when the eyeball begun and continued to project to the left side. Has double vision, and the two objects now appear to be more separated than at first; can see better without his glasses with his left eye than with them with the right. Has slight stiffness or numbness of the left cheek, and cannot breathe freely through left nostril, and when on his right side both nostrils are closed. Has no pain now, but experiences a stuffing, as if from a cold; sleeps well and has a good appetite.

I treated this case by application of cold and direct pressure against the aneurismal swelling by a curved spring attached to an India-rubber bandage around the head; by the use of small doses of digitalis daily; and requested the patient to assume a sitting position as much as possible. I could observe, in a short time, not only a gradual diminution in the impetus of the pulsation but also in the size of the tumour. To allay the

patient's anxious solicitude as regards the nature and probable result of his case, I requested him to consult Prof. Beaumont, who corroborated my opinion and indorsed my plan of treatment.

The left cheek became suddenly swollen and very painful, and a fungous growth made its appearance in front of the last molar tooth, in the space of a tooth which had been extracted some years ago. I removed this tumour two or three times in succession, and finally, by the application of nitric acid.

After a few weeks of perseverance in the above treatment, the tumour became hard and dense, and lost its pulsating character entirely, and the eye has assumed its natural position with improved vision. It is now five years since, and there is no indication of a reappearance of the disease.

Poisoning by Stramonium. By H. Y. EVANS, M. D.

While on duty last month, at one of the Homes for Friendless Children in this city, I was called to see seven of the inmates, aged from six to nine years, poisoned by eating the seeds of the Jamestown weed.

The seeds had been eaten about 10 A. M. At dinner (12 M.) two of the boys were noticed behaving in an unusual manner, refusing to eat, and quarrelling with those near them. Very soon a third boy, and by one o'clock seven gave marked evidence of being victims of the weed. I saw them at 2 P. M., four hours after they had taken the seeds. In all seven cases the pupils were dilated to their fullest capacity. In three, this, with a slight perversion of vision, were the only noticeable effects; but in the four remaining cases the narcotic had produced other and marked evidences of its presence—dilated pupils, perverted vision, confusion of intellect, deafness, intoxication, full pulse, slow respiration, entire loss of power of directing the motions of limbs, no eruption, nausea, or relaxation of bowels; and in a few hours stupor, which curiously enough was soon followed by obstinate insomnia, and in one case of delirium tremens. Emetics, ipecac, mustard water, powdered alum and sulphate of zinc, were freely administered—effectually in the three slight cases only, bringing away from eight to ten *whole* seeds from each child, but scarcely nauseating the other four cases. With the assistance of Dr. R. Stewart the stomach pump was used, and their stomachs washed of their contents. Many of the seeds thus removed were *finely chewed*, and as near as could be calculated about the same number as had been vomited by the three cases just mentioned, the only difference being that they were more comminuted in the latter cases.

In the most critical case the cold bath and douche were used. Opium and alcohol were administered with a favourable result. Opium was given in two other cases, apparently palliating the symptoms.

By the third day every vestige of the poison had disappeared, the pupils being the last to yield.

The only points of interest developed by these cases are: 1st. That ten of the seeds of the Datura stramonium, weighing less than one grain, which had been exposed to the rains and frosts for five months, should retain sufficient strength to seriously, if not fatally, poison a child of seven years.

2d. That the effects of the poison being so antagonistic to emetics, it is advisable in all such cases to resort immediately to the stomach pump. It was with the greatest difficulty that emesis was produced in the least affected of the seven cases, notwithstanding the powerful means employed.

DOMESTIC SUMMARY.

Cerebro-spinal Meningitis as observed at Mobile, Ala.—Dr. W. G. Armstrong describes (*Atlanta Med. and Surg. Journ.*, June, 1866) this disease as observed by him during the winters of 1863–4 and 1864–5 at Mobile, Al.

He states that "in the midst of good health, after taking a hearty meal, or after a full day's work, the patient, without any premonitory symptoms, is suddenly attacked with coma, or stupor, so profound that he is with difficulty aroused even for a moment.

"In other cases vertigo, pain in the head and cervical region, extending along the spine, with lassitude and apprehension of impending danger are observed. Then again, chilly sensations at intervals of two or three hours, with cold extremities, followed by exacerbations of heat, flushed face and increased pulse, mark the approach of the disorder. Lastly, delirium, more or less wild, with a disposition, forcibly, to leave the bed or room, is in the outset a prominent symptom. * * * The condition of the pulse was variable; usually ranging from ninety to one hundred, hardly reaching one hundred and ten, unless just before the termination in death; on the other hand, it occasionally sank to forty or fifty beats per minute. Vomiting of bile and constipation are usually, in the beginning, prominent symptoms; the tongue is furred, and as the disorder advances, the teeth become covered with sordes.

"The urine is highly colored, scanty and often retained; at other times, especially towards the close, it is passed involuntarily. Intolerance of light and sound, when present, appears at the early part of the attack—the least ray of light being sufficient to cause spasmodic closure of the eyes and intense suffering; walking across the floor is excessively annoying to the sufferer; deafness and a general indifference to surrounding objects is occasionally noticed.

"The most prominent and almost universal symptoms are pain in the head and neck, accompanied by a tetanic rigidity of the cervical muscles, and of the large extensor muscles of the back. This trouble, slight at first, increases until the head is drawn back upon the shoulders, and no ordinary degree of force used by the attendant can overcome it. The muscles of the back and lower extremities are occasionally so much involved as to produce complete opisthotonos. In connection with this condition, paralysis of the muscles of the face is sometimes present, as exhibited in depression of the lower jaw and protrusion of the cheeks and lips in expiration. Involuntary twitchings of the muscles and want of prehension often exist also—the patient being unable to drink without assistance. Strabismus in one or both eyes was met with in several cases. The appearance of the pupils is not always the same, in the majority of cases being dilated; sometimes one is contracted and the other dilated, and I have occasionally seen both contracted. Delirium may be present at any period of cerebro-spinal meningitis, though most common in the latter stages before coma sets in, and is then of a low, muttering character.

"When coma comes on, which is usually about the fourth or fifth day, the pupils become widely dilated, the pulse more full, but is never, so far as my observation extends, of a bounding character, as in coma from apoplexy. Involuntary discharges from the bowels and bladder are now of most frequent occurrence. Stertorous breathing is rarely present, and until the coma is profound, the patient is continually tossing himself from side to side in bed, and carrying his hands to his head as though in great pain.

"Another very common symptom is hyperæsthesia of the whole nervous system; pressure upon the extremities, slight moving of the feet or bending the toes, causes the patient to cry out from pain. This exaltation of sensibility does not often appear at first, but towards the latter part of the attack. While vertigo, pain in the head, chilly sensations, intolerance of light and sound, deafness, stupor, exalted sensibility of the nervous system, delirium and coma were the usual symptoms by which this epidemic was characterized, yet there were a few cases of an intermittent type, accompanied by high fever with pain

in the head. Under the use of quinia these symptoms would yield for a few days and convalescence seemed to be established. A recurrence of these symptoms would take place two or three times, when those more violent, as extreme pain in the head and neck, rigidity of the muscles, &c., would supervene, and declare unmistakably the formidable nature of the disease.

"The duration of this affection is variable; it may destroy life in twenty-four or forty-eight hours, but from five to eight days is the usual time. During the winter of 1863-4, it proved fatal sooner than in the following—a few of the last cases seen having lived from ten to fifteen days."

Four cases are related of the disease with the *post-mortem* appearances. In all the cases deposits of lymph, of greater or less extent, were found on the brain and spinal cord; effusion of serum, in the arachnoid space with also some pus. In one case the anterior two-thirds of the cerebrum superiorly, was covered with an adventitious deposit of lymph, of a greenish-yellow color, forming adhesions between the arachnoid and pia mater, and following the latter as it dips down into the convolutions of the brain. The under surface of the anterior lobes, optic commissure, crura cerebri and pons Varolii are the seat of exudation also. Some pus is found at the medulla oblongata. This exudation was from one to two lines in thickness. The lateral ventricles are distended with effusion, which being drawn off, pus is found at the bottom. The choroid plexus is injected. The brain shows, on section, no indurations or softening, but appears healthy. In another case there was a deposit of lymph between the pia mater and arachnoid, on the anterior surface of the cerebrum superiorly, extensively upon and around the optic commissure, over the entire cerebellum, crura cerebri, pons Varolii, medulla oblongata, and spinal cord, throughout its whole extent to the cauda equina. The nerves arising from the cord on both sides were enveloped with this deposit also. At several points along the cord it had degenerated into pus.

Dr. A. states that, in his very extensive observations of the disease among the soldiers and negro labourers in and around Mobile, he never saw a single case recover.

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Successful Operation for Subclavian Aneurism.—The first No. of the *New Orleans Medical Record*, edited by the well-known indefatigable Dr. Bennet Dowler, contains an interesting account, by Dr. A. W. SMYTH, of a case of a mulatto man, thirty-two years of age, admitted into the Charity Hospital, New Orleans, May 9, 1864, with aneurism of the right subclavian artery. The tumour was of the size of a small orange, "was circumscribed and round in shape, filling up the posterior inferior triangle of the neck; strong pulsatory movement was visible even at some distance, and on applying the ear to its surface, a loud bellows sound was heard accompanying the arterial beat. No difference was detected in the pulsation of the two radial arteries at the wrist, and there was nothing abnormal in the sounds of the heart.

"He complained a good deal of severe pain and numbness in the forearm and hand; for the past two months he had been unable to lie down or stand erect, but was compelled to lean forwards continually for relief, and to sleep sitting in a chair with his head resting on the side of the bed or on another chair placed opposite."

The patient was seen by a number of surgeons, and among others Dr. D. L. Rogers, of New York, who strongly urged the ligature of the innominate and carotid arteries at the same time. Dr. Smyth approved of this suggestion, and decided to adopt it. Accordingly on the 15th May, Dr. S. operated, assisted by Drs. Rogers, Holliday, Boyer, Bacon, and Orten.

"A longitudinal and transverse incision having been made after the method of Mott, no difficulty was experienced in placing a ligature on the innominate artery a quarter of an inch below its bifurcation, and another on the carotid, an inch above its origin. On tying the former all pulsation stopped in the tumour. The temperature of the arm and hand was immediately increased, and in about forty-eight hours after the operation a perceptible undulatory motion was discovered in the arteries of the wrist. But little diminution was yet apparent in

the size of the aneurism, and, except some slight febrile action, soon subsiding, no other constitutional disturbance was observed. The patient was now able to lie down for the first time in two months, and all went on favourably until the 29th. He complained, however, for the first few days of a burning pain in his arm, different (he said) from the numbness experienced before the operation. The ligature had come away from the carotid artery the day before.

"On the 29th of May, fourteen days from the time of operating, a severe hemorrhage occurred, causing syncope rapidly, and ceasing of its own accord. At least sixteen ounces of blood must have been lost in the space of three or four minutes. To prevent its recurrence the wound was filled with lint, and a small weight placed upon it to effect compression. Slight hemorrhage, however, to the extent of two ounces at a time took place on the two following days, and was stopped by the nurse pressing the lint more firmly into the wound.

"Finding that something more was necessary to check the bleeding, the idea suggested itself to me of filling the wound with small shot, as a more effectual means of compressing the artery. This expedient, although not exempt as I could see from dangerous consequences, at the same time offered some advantages, the principal among which was, that the pressure of the shot on the artery might possibly aid in effecting its occlusion. In removing the lint for this purpose hemorrhage recurred, and I found that the shot fully answered my expectations in checking it—so much so, that wishing to remove the ligature from the innominate, believing it now to be a useless source of irritation, I felt safe in pulling it away even against some resistance.

"A slight oozing, sufficient to stain the lint placed over the surface, followed for the two subsequent days, when it ceased, and all went on well for a fortnight more. The patient felt some difficulty in swallowing and an occasional desire to cough, about which, however, he made little complaint. The aneurism diminished rapidly in size, and pulsation became quite distinct at the wrist.

"The shot sinking gradually in the wound, I began to entertain some fears of its getting out of reach, and, on the 17th of June, I picked about half of it out with forceps, but in five hours, hemorrhage returning, it was immediately replaced. Slight bleeding, however, still recurred at intervals of two and fifteen days and was checked without difficulty.

"On the night of July 5th, being sent for with the announcement that the patient was dying, I discovered, on getting to his bedside, that he had had a terrific hemorrhage exceeding in quantity the first, on the 29th of May; he had fainted, was pulseless, and gasping in a frightful manner. The bleeding having ceased, I placed a compress of lint over the wound and added the paper weight used before as additional security.

"In the morning, on visiting the wards, I was surprised to find him fanning himself; he was very pale, his pulse was 140, and weak; his voice, however, was strong, and he observed that if the bleeding could only be stopped he would yet do well."

After studying the subject, Dr. S. concluded that the vertebral carries on almost the entire anastomosing circulation into the subclavian artery, and he therefore decided to ligate the former vessel. On the 8th July, fifty-four days after the first operation, he placed a ligature on the vertebral artery in the following manner:—

"The head of the patient being thrown back and slightly turned to the left, an incision, two inches in length, was made along the posterior border of the sterno-mastoid muscle, commencing at the point where the external jugular vein crosses this muscle and terminating a little above the clavicle, the edge of the muscle being exposed and drawn to the inner side, the prominent anterior tubercle of the transverse process of the sixth cervical vertebra was readily felt and taken for a guide. Immediately below this, and in a vertical line with it, lies the artery. A layer of fascia was now divided, some loose cellular tissue with lymphatics and the ascending cervical artery were pulled to the inner side, and a separation was made between the scalenus anticus and longus colli muscles close below their insertion into the tubercle, when the artery and vein became

visible, the latter was drawn to the outer side (this is important) and the needle passed around the former from without inwards.[1]

"No constitutional disturbance whatever was observed after this operation, which was much facilitated by the empty state of the vessels. On the following morning all the shot was removed from the first wound (having remained thirty-eight days) and was found to weigh two and a half ounces. It had gone deeply into the neck and had probably ceased to press on the artery.

"A marked decrease in the circulation of the arm was now apparent, the slight pulsation at the wrist disappearing; coldness and œdema supervened and the brachial artery became occluded, feeling corded throughout its whole extent. I was somewhat alarmed for the safety of the limb, but in a few days these unfavourable symptoms began to subside and slight pulsation was again perceived in the radial artery.

"No further hemorrhage having taken place after the second operation, the new wound healed rapidly; the ligature coming away on the tenth day. The first wound also closed, though more slowly, and the patient at present, September 15th, is entirely well, excepting that he yet lacks perfect command over the muscles of his arm, which, however, he is rapidly regaining. The aneurismal sac has almost disappeared, but there still exists some noticeable swelling above the clavicle.

"The lessons drawn from this first successful case must be of great importance in future operations for the cure of subclavian aneurism. We have twenty recorded cases, in which ligature of the innominate or of the subclavian artery in the first part of its course, *without that of the vertebral*, have proved fatal, and it is reasonable to suppose that it would always prove so.

"In the present case it would have been a difficult matter to have reached the vertebral at the time of the first operation, owing to the size of the aneurism. Still I think it was possible (it would always be so in the upper part of its course), and the early occurrence of secondary hemorrhage in some of the fatal cases shows the danger of delay.

"If the innominate and vertebral arteries should be tied at the same time, it would not do to omit ligature of the carotid also, since we have seen that its occlusion in other cases was only owing to the current from the vertebral. But if an interval should be allowed to elapse between the operations, it is a question whether the carotid might not be left to this occlusion. Statistics being so imperfect on this point it is impossible to decide.

"It is highly probable that ligature of the vertebral will also render safe the operation on the subclavian in the first part of its course, and this might appear preferable in some cases to tying the innominate, as it would leave the carotid free."

Ligature of Primitive Iliac Artery.—Dr. R. N. ISHAM records (*Chicago Medical Journal*, May, 1866) a case of aneurism of the anterior trunk of the internal iliac, resulting from a bayonet wound of the right buttock through the ischiatic notch, for which he ligated the primitive iliac on the 7th October. Gangrene of the sac occurred, and the patient died on the 11th October. An interesting feature in the case was the disappearance of the tumour, and its subsequent return constituting secondary aneurism. An interesting case of the same occurrence after ligature of the primitive iliac artery, related by Dr. J. B. Cutter, will be found in the number of this Journal for October, 1865.

Gunshot Wound, with Removal of Rim of Acetabulum, and Dislocation of Femur; Recovery.—An interesting case of this is recorded by Dr. J. F. MINER (*Buffalo Medical Journal*, May, 1866).

The subject of it, Col. Strong, was wounded, May 5, 1862, at Williamsburgh,

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[1] The vertebral artery sometimes passes in front of the anterior tubercle of the sixth cervical vertebra, entering the foramen in the fifth transverse process—in this case it is easily found. In a subject in whom the right subclavian was given off beyond the left, returning behind the trachea, the vertebral branch entered the foramen of the seventh vertebra. These variations are worth remembering.

Va. The ball entered a little below the anterior superior spinous process of the ilium, and made its exit near the outer margin of the sacrum. The ball passed deeply, and fractured in its course the rim of the acetabulum, which was removed an inch and a half in length and of a diameter sufficient to show that the whole upper rim had been carried away. The wound was very large, and a thorough examination could be made by the easy passage of the finger. After a stay in military hospital of eight days, he was placed on board ship, and taken to his home, Buffalo, N. Y. On his arrival the wound presented a healthy appearance, and the constitutional disturbance was slight, considering the nature of the injury. The leg was partly flexed upon the thigh, and the thigh upon the body, the whole drawn internally to considerable extent. In this position it was fixed; it could not be moved in the slightest degree without producing pain, which was absolutely unendurable. The constitutional disturbance at length became very great, and the question of life rather than position of the leg engrossed all attention. Fragments of clothing and spiculæ of bone were at various times extracted or washed from the wound, while great quantities of pus constantly issued. Chills, profuse perspiration, rapid pulse, great prostration, with total loss of appetite, make up the main features of the case, the severe and continual pain overshadowing and covering all other symptoms—pain which it was impossible to allay. In this condition of extreme distress and uncertainty of life he continued without great change for about eight or ten weeks, when he gradually and very slowly commenced to improve, both in his general condition and in the appearance of the wound, until after a few weeks more he could be moved from one side of the bed to the other, and his comfort promoted by change of position. Abscesses afterwards occasionally formed for the next two years inducing great constitutional disturbance. For the last two years the patient has enjoyed comfortable health.

At present "the thigh is shortened three and a half inches; the head of the femur rests upon the illium above the acetabulum, and a complete and bony anchylosis exists; the knee is drawn inwards and the joint has good motion. The weight of the body can be borne upon that leg with comfort, and the twisting of the pelvis and the extension of the toes compensate for the shortening and stiffening in a wonderful degree, so that he walks with, or without a cane, with but slight disability, considering the severity of the injury and the unnatural condition of the articulation."

New Liquid for Producing Local Anæsthesia.—Prof. Henry J. Bigelow recommends (*Boston Med. and Surg. Journ.*, April 19, 1866) a petroleum naphtha, one of the most volatile liquids obtained by the distillation of petroleum, to which he gives the name of *Rhigolene*, as superior to ether for producing local anæsthesia. When Prof. B. learned, he says, that Dr. Richardson, of London, has succeeded in producing local anæsthesia by ether vapour, it occurred to him "that a very volatile product of petroleum might be more sure to congeal the tissues, besides being far less expensive, than ether. Mr. Merrill having, at my request, manufactured a liquid of which the boiling point was 70° F., it proved that the mercury was easily depressed by this agent to 19° below zero, and that the skin could be with certainty frozen hard in five or ten seconds. A lower temperature might doubtless be produced, were it not for the ice which surrounds the bulb of the thermometer. This result may be approximately effected by the common and familiar "spray producer," the concentric tubes of Dr. Richardson not being absolutely necessary to congeal the tissues with the rhigolene, as in his experiments with common ether. I have for convenience used a glass phial, through the cork of which passes a metal tube for the fluid, the air-tube being outside, and bent at its extremity so as to meet the fluid-tube at right angles, at some distance from the neck of the bottle. Air is not admitted to the bottle, as in Mr. Richardson's apparatus, the vapour of the rhigolene generated by the warmth of the hand applied externally being sufficient to prevent a vacuum and to insure its free delivery; 15° below zero is easily produced by this apparatus. The bottle, when not in use, should be kept tightly corked, a precaution by no means superfluous, as the liquid readily loses its more volatile parts by evaporation, leaving a denser and consequently less effi-

cient residue. In this, and in several more expensive forms of apparatus in metal, both with and without the concentric tubes, I have found the sizes of 72 and 78 of Stub's steel wire gauge to work well for the air and fluid orifices respectively; and it may be added that metal points reduced to sharp edges are preferable to glass, which, by its non-conducting properties, allows the orifices to become obstructed by frozen aqueous vapour.

"Freezing by rhigolene is far more sure than by ether, as suggested by Mr. Richardson, inasmuch as common ether, boiling only at about 96° instead of 70°, often fails to produce an adequate degree of cold. The rhigolene is more convenient and more easily controlled than the freezing mixtures hitherto employed. Being quick in its action, inexpensive, and comparatively odourless, it will supersede general or local anæsthesia by ether or chloroform for small operations and in private houses. The opening of felons and other abscesses, the removal of small tumours, small incisions, excisions, and evulsions, and perhaps the extraction of teeth, may be thus effected with admirable ease and certainty; and for these purposes surgeons will use it, as also, perhaps, for the relief of neuralgia, chronic rheumatism, &c., and as a styptic, and for the destruction by freezing of erectile and other growths. But for large operations it is obviously less convenient than general anæsthesia, and will never supersede it. Applied to the skin, a first degree of congelation is evanescent; if protracted longer, it is followed by redness and desquamation, which may be possibly averted by the local bleeding of an incision; but if continued or used on a large scale, the dangers of frost-bite and mortification must be imminent."

Dr. CALVIN G. PAGE, in a subsequent number of the same journal (May 24, 1866), confirms the statement of Prof. B.

"It is well known," he says, "that the temperature of the ordinary freezing mixture of ice and salt is from 0° to —2°. This temperature has been found sufficient for freezing living tissue and destroying local sensibility, but this mixture requires time for preparation, is sometimes difficult to apply, and is not available in the mouth. Ether (easily reduced to —4°), when vaporized in the mouth, produces irritation and disagreeable disturbance of the mucous membrane. Rhigolene has no such objection; when applied in the mouth it causes no irritation, nor does it produce any of the signs of general anæsthesia, the time taken in applying it being only from five to ten seconds. I have used it successfully in nine cases at the Central Office of the Boston Dispensary on teeth. The gum outside and inside should be slightly frozen, and should the crown of the tooth be found broken, it can be applied directly upon the carious part of the tooth, which may then be extracted without any outcry from the patient. I have also used it in various minor operations at the Dispensary, for Dr. S. L. Sprague, as extracting a fish-hook from the finger, extracting a needle from the hand, opening an abscess on the shoulder, a felon, &c.; and also at my own office for the first time on Sunday, April 15th, for opening a felon, and since then twice for felon and once for abscess, with perfect success.

"The result of all my experiments and trials seems to prove that rhigolene is a perfectly successful local anæsthetic, and in the mouth is superior to anything yet used; that ether will do the work on the external surface of the body without difficulty, as it can be brought below the temperature of the ordinary freezing mixture, but requires more time; that the Richardson instrument has no powers not equalled or surpassed by my modification of the Bergsen tubes. It is probable that the ordinary Bergsen tubes, made of smaller tubing and with finer points, will be finally used for local anæsthesia, with such modifications of form as will render them applicable to the mouth and the vagina. The excess of fluid in the tube is best prevented by placing a bit of sponge or wicking in the open end of the fluid-bearing arm of the tube.

"Instruments with stopcocks or cylinders requiring lubrication are not available with rhigolene, which takes up all oily matter in solution and causes leakage—for example, Luer's atomizer. Glass tubes will not answer, glass being a non-conductor.

"Dr. Bigelow, in his article on Rhigolene, gives a temperature of —19° as easily produced, but does not give the time necessary to produce it. I doubt if such a low temperature can be produced on a standard thermometer in sixty seconds,

the time allowed in most of my experiments, by any instrument yet devised, though it can be if sufficient time is taken. The only objections to rhigolene are that it must be kept very cool, and cannot be conveniently carried about in warm weather or in the evening, as it boils at 70°, and is inflammable."

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Active Principle of Rhus Toxicodendron.—Mr. JOHN P. MAISCH, one of our most skilful pharmaceutists, has published (*American Journal of Pharmacy*, January, 1866) his analysis of the Rhus Toxicodendron, which shows that it contains a new organic acid, for which he proposes the name of *Toxicodendric acid*. "That it is the principle," he states, "to which the poison oak owes its effects on the human system, was proved to my entire satisfaction by the copious eruption and the formation of numerous vesicles on the back of my hand, on the fingers, wrists, and bare arms, while I was distilling and operating with it. Several persons coming into the room while I was engaged with it, were more or less poisoned by the vapours diffused in the room; and I even transferred the poisonous effects to some other persons, merely by shaking hands with them.

"The dilute acid, as obtained by me, and stronger solutions of its salts, were applied to several persons, and eruptions were produced in several instances, probably by the former, though not always, which was most likely owing to the dilute state of the acid. Whenever this was boiled, I always felt the same itching sensation in the face, and on the bare arms, which I experience on continual exposure of my hands to the juice of the plant.

"As remedies against it, I have tried subacetate of lead, permanganate of potassa and ammonia, the last, I believe, with the best success. Alkaline solutions were first recommended by Prof. Procter, I believe, and, as my experiments show, they are the remedies which, *à priori*, might be expected to afford the greatest relief, just as in the case of formic acid. The eruption produced by this acid is very similar in its nature to the one produced by toxicodendric acid, and its effects yield readily to alkaline lotions. It is not unlikely that, like the formiates, the toxicodendrates are without any ill effects, if applied externally. The reactions of our new acid show, likewise, the reason why permanganate of potassa, subacetate and even acetate of lead may be valuable remedies for this eruption. While the former completely decomposes it, the last named salts produce nearly insoluble precipitates with it; at least, toxicodendric appears to be stronger in its affinities than acetic acid."

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Sanitary Condition of the City of New Orleans during Federal Military Occupation.—The *Southern Journal of Medical Sciences* for May, 1866, has an interesting paper on this subject by one of the editors, Dr. E. D. FENNER, whose death our profession has recently had to deplore. This article teaches some sanitary lessons of the utmost importance. Dr. F. testifies from personal observation to the extraordinary efforts made by the military authorities to improve the sanitary condition of the city and to the success of those efforts. "Such efforts," he observes, "were never made before, although so often urged by the medical profession in previous years. But, perhaps, it may be said *such motives* were never presented before. Be that as it may, in spite of all the sufferings and sorrows incident to the war, we may still be thankful that this great sanitary experiment has been made. The city may be said to have been cleansed, and kept clean; at least when contrasted with anything of the kind ever seen here before. It was a herculean task, and, in our humble opinion, nothing short of military despotism would have accomplished it. The good work is not yet completed, but its salutary effects so far have been palpable, and ought to encourage us to carry it on to perfection. We have long entertained the opinion that if approved sanitary measures were as rigidly enforced in New Orleans as they are in London, Paris, and other European cities, it would perhaps rival any of them in salubrity. There is nothing in the climate or locality that renders the preservation of health and the attainment of longevity here impossible."

"But it may be contended," he adds, "that New Orleans is more indebted to quarantine than to local sanitary police for its escape from epidemic pestilence during its late military occupation. I cannot think so. Quarantine was supposed to be enforced with all possible rigor, being demanded by the same powerful motives

that urged the enforcement of local sanitary measures. But I dare say there were a few lapses during the period. I, myself, saw a fatal case of yellow fever near St. Mary's Market in July, 1862, that was imported from Key West, Florida. The vessel on which it came was soon sent down to the quarantine station, and no bad effects followed. There may have been others which have not been brought to light, for every effort was made to ignore the existence of yellow fever in the city, to prevent panic among the soldiers.

"But, admitting yellow fever to have been imported into the city every year during its military occupation, we have still the extraordinary fact that the disease did not spread or become epidemic among a vast crowd of the most susceptible subjects. To what could this escape be attributed save the admirable local sanitary police that was established and enforced? Admitting that a considerable number of yellow fever cases were imported during the military occupation, a fact which I this moment learn from conversation with a member of the sanitary commissioners appointed by the commanding general, it only strengthens the argument in favour of the superior virtues of local sanitary police. How else can the failure of the disease to become epidemic be accounted for? Yellow fever raged fearfully at Wilmington, North Carolina, in 1863, then in the Confederate lines, and at Newbern, in the same State, in 1864, in both instances attributed to importation.

"All that is expected of quarantine is to keep contagious or infectious diseases from places where such diseases do not originate. If it cannot do that, it is an expensive and very troublesome thing. If such diseases originate in a place it is vain to expect complete protection from quarantine. Yellow fever was almost universally thought to be in this category in respect to New Orleans until within the last few years. But it is now contended there are two distinct species of yellow fever—the one pestilential and highly infectious; the other paludal or malarious, and but slightly, if at all, infectious. The former originating alone within the tropics—the latter epidemic at many places beyond. However real the grounds of this distinction may be, there is no doubt that this disease, like scarlatina and many others, varies greatly in malignancy and infectiousness at different times; and when a pernicious type of it prevails if there be any known means capable of preventing its extension they should certainly be adopted. Quarantine is the measure generally resorted to for this purpose, but, unfortunately, it has never satisfactorily accomplished the object. Why is this? Is it because a perfect quarantine has never been enforced? Or rather because it is impossible to prevent the spreading of such a pestilence by such means? These are questions of the highest importance; and if the experience of the last sixty-five years both in Europe and America have not been sufficient to settle them definitely, we shall have to wait for more."

"The exemption of New Orleans from epidemics of yellow fever during the period of military occupation cannot, in our opinion, be attributed to the agency of quarantine, because infected vessels with the disease on board were admitted into the city at different times, both early and late in the hot seasons of the year, when every circumstance was most favourable to its prevalence if it were really contagious. To what then can the escape be due? Some may say to accident—or chance; and in proof of it refer to similar escapes from as long periods in previous years. But we maintain that no parallel in all respects can be cited since yellow fever began to prevail at New Orleans. Others will be more inclined to think with ourselves that it was owing to the improved sanitary condition of the city. If this be true, it corroborates the conclusions of the ablest investigators of the present day into the origin and spread of pestilence. The plague, Asiatic cholera, and yellow fever belong to the same class of diseases, the *zymotic*, and originated from similar causes. Unfortunately, the precise nature of those causes still remains unknown; yet we have learned much in respect to the conditions necessary to their production and favour their extension.

"If our people would avail themselves of this knowledge and carry out the measures it inculcates, we have every reason to believe such diseases might be prevented, or eradicated when they exist. All efforts hitherto made to prevent their extension by means of quarantine and sanitary cordons have failed, and we have but little reason to hope they will ever succeed. For twenty years, we, and some others, have laboured to convince the people of New Orleans that the

only way to make the city healthy is, *to make and keep it clean.* But we have laboured in vain. In the mysterious course of events the hand of the tyrant has been brought to our aid, and the results are marvellous. Will our citizens profit by this experience, and continue to enforce their own health ordinances as the Federal military authorities enforced them? If they do not, the consequences will surely be deplorable."

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Removal of a Pistol Ball; Use of Acupuncture Needle.—Dr. Gurdon Buck stated to the New York Pathological Society (January 25, 1866) that he had successfully employed the acupuncture needle in detecting the ball in a case of gunshot wound in a man who, while carrying a pistol in his fob, the weapon was accidentally discharged and its contents were lodged into the groin immediately below Poupart's ligament, just two inches outside of the femoral. On introducing a probe into the wound of entrance, it followed a track over the inner condyle and a little above it, and at its bottom a firm body was encountered that was about the size and shape of the missile that was supposed to have been lodged there. This body could be slipped within a certain limit, and its movement would cause pain. Presuming that it was the ball, there was not certainty enough in the diagnosis to warrant an attempt at its extraction until the acupuncture needle was used. This was passed down in the situation of the deep-seated lump through the tissues, and encountered the foreign body. By certain manipulations it was found to escape from the point of the instrument and roll aside, which fact left no doubt in the mind of the presence of the projectile at that point. It was then cut down upon a narrow-bladed knife, and removed without difficulty. Dr. Buck remarked that his attention had been first called to the needle by seeing a published account in some of the medical periodicals of its use by a Scotch army surgeon, whose name he did not recollect. Dr. Buck also stated in this connection that he had employed the same procedure with success in discovering the existence of a calcareous body impacted in the prostate gland. The needle in this instance was curved, and was introduced into the gland upon the finger as a guide. The needle is very fine, and has a trocar point in order to facilitate its entrance into the tissues.—*Medical Record*, June 15, 1866.

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Hyposulphite of Soda in Scarlet Fever.—Dr. N. L. North states (*New York Med. Journal*, March, 1866) that he has been led by Dr. Polli's theory to give the hyposulphite of soda a trial in scarlet fever, and he thinks it a remedy of much power in controlling the symptoms of the developed disease, by eliminating or destroying the poison, and also as a prophylactic.

"I am not so sanguine," he says, "as to suppose that we have in the hyposulphite of soda an unfailing remedy for this dreaded malady, or even a positive prophylactic; yet I have a strong belief that it may prove beneficial both in the treatment and prevention of scarlet fever."

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Rupture of the Uterus; Gastrotomy; Recovery.—Dr. E. Miles Willett records (*Medical and Surgical Monthly* (Memphis), March, 1866) a case of this.

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Necrology.—Alexander Ingram was born in Macduff, near Bauff, Scotland, Dec. 12, 1837, while his parents were on a visit to their native land. In the fall of 1840, they returned to this country with their son, and settled near Cincinnati, Ohio. In 1854, he entered Dartmouth College, and in 1858 graduated third in his class. On returning to Cincinnati, he entered the office of Dr. Potter, as a student of medicine, and after attending the usual course of lectures, graduated with credit at the medical college of Ohio in March, 1861; spending the last year of his student life as an "interne" in the Commercial Hospital in that city, where his affability and studious habits endeared him both to the Faculty and to all with whom he was associated.

After graduating, he opened an office in Cincinnati with every prospect of success, but abandoned it upon the breaking out of the war, and presented himself before the Army Medical Board in New York City for examination for the position of assistant surgeon in the army, passing sixth in a class of twenty, and receiving his commission on the 28th of May, 1861.

He was first assigned to duty in the hospital for regulars, in C St., Washington, D. C.; then in the Union Hotel Hospital, Georgetown, D. C., to the charge of which he soon succeeded by the resignation of Assistant Surgeon Gaenslen, U. S. A., who joined the army of the rebellion; he then organized, and was assigned to the charge of the "Circle" Hospital, Washington, D. C., remaining there until Oct. 3, 1861, when he was assigned to duty with the Second U. S. Cavalry, McDowell's Division, Army of the Potomac, at that time encamped near Washington. This regiment accompanied the army on its first grand movement in March, 1862, and Dr. Ingram remained with it throughout the entire Peninsular campaign, participating with it in the battles at Yorktown, Williamsburg, Hanover C. H., Mechanicsville, Gaines Mills, Savage Station, White Oak Swamp, Malvern Hill, the Second Bull Run, South Mountain, and Antietam, and remaining with it until Dec. 10, 1862, when, on account of his health, which had suffered severe inroads from the exposure of the field and active campaigning, he was assigned to the charge of the St. Aloysisin's Hospital, Washington, D. C., where he remained until its discontinuance, when he was assigned to the charge of the Judiciary Square Hospital.

In August, 1864, he was assigned, at his own request, to duty in the Department of the Pacific, and on arriving at San Francisco, California, Oct. 10, 1864, was assigned to the duty in that city of attending officers and their families and as a member of the examining board for medical officers of the volunteer service.

Upon this duty he remained until Feb. 6, 1865, when he was assigned as surgeon-in-chief of the troops in Southern California, with his station at Monterey, and remained at the port until the following July, when he was ordered to Cape Disappointment, Washington Territory, and embarked July 28, 1865, in company with brevet Brig.-General Geo. Wright, U. S. A., commanding the department, on the ill-fated steamer, "Brother Jonathan," which, on the 30th of July struck a sunken rock off the coast of California, opposite Camp Lincoln, and about six miles north of Crescent City, and with her precious freight went to the bottom in a few minutes; sixteen souls only, out of all on board, were saved to tell the sad tale.

But few men possess the qualities, both mental and physical, which were embodied in Dr. Ingram; of frank, manly countenance, fine physique, and graceful carriage, with a disposition at once gentle but firm, kind and considerate, and a heart as susceptible as a woman's, he was, indeed, the beau ideal of a man.

As a surgeon he had but few superiors; a thorough anatomist, and possessed of most excellent judgment, he was rapid in his decisions, and bold and daring in his operative procedures, and his contributions of pathological specimens to the Army Medical Museum are mute evidence of the zeal with which the practice of his profession was pursued. His skill as a physician was universally admitted; his gentle nature and winning manners endeared him to his patients; his kindness and appreciation of suffering was proverbial, and many a prayer from the fevered lips of the sick soldier has gone to the throne of grace in behalf of this physician, whose cheerful face and kind consoling words shed such a glow of sunshine on the hearts of his country's defenders.

In the regiment with which he served (the 2d U. S. Cavalry) he was a great favourite; his consideration for and devotion to the men, who always received his earliest attention and warmest sympathies, converted into an attachment that respect which they could not but feel for him as an officer, and his courage and fearlessness commanded the admiration of all his brother officers; always at his post, heedless of any danger, sacrificing his personal comfort on all occasions for the comfort of the wounded, and scrupulously attentive to all their wants, can it be wondered at that this soldier surgeon was beloved by all who knew him?

The following paragraph, written by one of his comrades, attests the affection with which he was regarded by them:—

"Many are the brave hearts and noble souls, over whose almost lifeless forms he watched from night till morn, and till night again, and whose every want was anticipated and administered to, as is that of the dying babe by the fond and affectionate mother. *Soldiers* feel his loss as none but soldiers can feel, and soldiers' prayers ascend to heaven with his soul."—C. R. G.

UNIVERSITY OF PENNSYLVANIA.

MEDICAL DEPARTMENT.

ANNOUNCEMENT FOR THE ONE HUNDRED AND FIRST SESSION—(1866-67).

William Gibson, M. D.,	Emeritus Professor of Surgery.
George B. Wood, M. D.,	Emeritus Professor of Theory and Practice of Medicine.
Samuel Jackson, M. D.,	Emeritus Professor of Institutes of Medicine.
Hugh L. Hodge, M. D.,	Emeritus Professor of Obstetrics and the Diseases of Women and Children.
Joseph Carson, M. D.,	Professor of Materia Medica and Pharmacy.
Robert E. Rogers, M. D.,	Professor of Chemistry.
Joseph Leidy, M. D.,	Professor of Anatomy.
H. H. Smith, M. D.,	Professor of Surgery.
Francis G. Smith, M. D.,	Professor of Institutes of Medicine.
R. A. F. Penrose, M. D.,	Professor of Obstetrics and the Diseases of Women and Children.
Alfred Stillé, M D.,	Professor of Theory and Practice of Medicine.
D. Hayes Agnew, M. D.,	Demonstrator of Anatomy, and Assistant Lecturer on Clinical Surgery.

The Lectures of the Session (1866–67) will begin on the second Monday of October and close on the first of March.

One Introductory will be delivered to the Course.

Clinical Instruction is given throughout the Session, in the Medical Hall, by the Professors, and at the Hospitals. At the Philadelphia Hospital, containing 571 beds, instruction is free.

The Dissecting Rooms, under the superintendence of the Professor of Anatomy and the Demonstrator, are open throughout the year, except in July and August.

The room for Operative Surgery and the Application of Bandages, &c., is open throughout the Session, under the supervision of the Professor of Surgery.

Fees for the Lectures (each Professor $20)	$140*
Matriculation Fee (paid once only)	5
Graduation Fee	30

The Lectures of the Auxiliary Faculty of Medicine commence on the first Monday of April, and continue to the end of June, by the following Professors:—

Harrison Allen, M. D.,	Zoology and Comparative Anatomy.
Horatio C. Wood, Jr., M. D.,	Botany.
F. V. Hayden, M. D.,	Geology and Mineralogy.
Henry Hartshorne, M. D.,	Hygiene.
John J. Reese, M. D.,	Medical Jurisprudence and Toxicology.

This course is free to all Students of the University.

R. E. ROGERS, M. D., *Dean of the Medical Faculty,*
University Building.
Ninth Street between Chestnut and Market Sts.

At a Public Commencement, held March 14, 1866, in the Academy of Music, the degree of Doctor of Medicine was conferred by Rev. Daniel R. Goodwin, D.D., Provost, upon the following gentlemen: after which an Address was delivered by Henry H. Smith, M. D., Professor of Surgery.

NAME.	COUNTY.	STATE.	SUBJECT OF THESIS.
Agnew, Henry	Northampton,	Pa.	Dysentery.
Barkdoll, Francis	Washington,	Md.	Circulation of the Blood.
Beck, Joseph Reinmund	Fairfield,	Ohio.	Epilepsy.
Best, Isaac R.	Bracken,	Ky.	Pneumonia.
Betts, Thomas	Bucks,	Pa.	Acute Enteritis.
Bishoff, Henry W.	Dauphin,	Pa.	Epidemic Cerebro-Spinal Meningitis.
Bright, Joseph T.	Fayette,	Ky.	Spermatorrhœa.

* The fee for attendance on the Lectures of the University has been raised in common with those of the Philadelphia, New York, and Boston Schools of Medicine.

NAME.	COUNTY.	STATE.	SUBJECT OF THESIS.
Brown, John T.	Chester,	Pa.	Dysentery.
Browning, Ludwell Yancy	Mason,	Ky.	Eclampsia.
Brumbaugh, Andrew B.	Huntingdon,	Pa.	The True System of Medical Eclecticism.
Brush, Platte E. (M. D.)	Susquehanna,	Pa.	Specialties in Medicine.
Burke, Patrick Henry	Stewart,	Ga.	Hospital Gangrene.
Carman, William J.	Greene,	N. C.	Rubeola.
Caumont, Francis G.	H'tes Pyrenees,	France.	Phthisis Pulmonalis.
Cloud, J. Albert	Chester,	Pa.	Rheumatism.
Coe, William H.	Livingston,	N. Y.	Thyphoid Fever.
Cooper, Ezek'l W.	Kent,	Del.	Influence of the Mind on the Corporeal Functions.
Corson, Thomas F.	Montgomery,	Pa.	Chronic Diarrhœa.
Corss, Frederic	Bradford,	Pa.	Vision.
Crooks, William C.	Philadelphia,	Pa.	Wounds.
Curtin, Roland G.	Philadelphia,	Pa.	Palpitation of the Heart.
Dann, Archibald	Genesee,	N. Y.	Science *vs.* Charlatanry.
De Beust, Robert Hare	Philadelphia,	Pa.	Opium, its Uses and Abuses.
Donges, John W.	Berks,	Pa.	Injuries incident to Mining Regions.
Downing, Francis M.	Mason,	Ky.	The Early Treatment of Children.
Duckworth, William L.	Haywood,	Tenn.	Relation between Chemistry and Medicine.
Du Pont, Alexis I.	New Castle,	Del.	Acute Colitis.
Eby, James B.	Perry,	Pa.	Epidemic Cholera.
Ellerbee, Alexander W.	Chesterfield,	S. C.	Typhoid Fever.
Ellershaw, William	Philadelphia,	Pa.	Phthisis Pulmonalis.
Ellis, Ruffin B.	Wake,	N. C.	Inflammation.
Ermentrout, Samuel C.	Berks,	Pa.	Typhoid Eever.
Evans, Richard W.	Philadelphia,	Pa.	Insanity.
Forbes, William S. (M. D.)	Philadelphia,	Pa.	On the Treatment of the Wounded Men of the 12th Army Corps during the Siege of Vicksburg, 1863.
Ford, Stephen E.	Cecil,	Md.	Typhoid Fever.
Forwood, John F. M.	Delaware,	Pa.	Hospital Gangrene.
Frame, Thomas C.	Kent,	Del.	Yellow Fever.
Frazer, James H.	Cecil,	Md.	Diseases of the Chest.
French, Jona. John	Philadelphia,	Pa.	Typhus Fever.
Gerhard, Abraham S.	Montgomery,	Pa.	Desquamative Nephritis.
Gillespie, John E.	Chester,	Pa.	Gonorrhœa.
Githens, William H. H.	Philadelphia,	Pa.	Differential Diagnosis between Typhus and Typhoid Fevers.
Grayson, Thomas F.	Loudon,	Va.	Typhoid Fever.
Groff, John A.	Berks,	Pa.	Dysentery.
Guthrie, James G.	Butler,	Pa.	Typhoid Fever.
Gutshall, Frank A.	Cumberland,	Pa.	Desquamative Nephritis.
Hall, George M. D.	Centre,	Pa.	Pleuritis.
Hare, Horace Binney	Philadelphia,	Pa.	Cholera Infantum.
Hartman, William L.	Chester,	Pa.	Spermatorrhœa.
Harrison, William D.	Philadelphia,	Pa.	On the Constitutional and Local Treatment of Gangrene.
Harry, David W.	Montgomery,	Pa.	Scarlatina.
Hassler, Ferdinand A.	Washington,	D. C.	Entozoa.
Herman, Benjamin F.	Cumberland,	Pa.	Emmenagogues.
Howard, Stephen	Cumberland,	N. S.	Hepatitis.
Hoy, Jeremiah W.	Centre,	Pa.	The Medical Profession.
Huffnagle, John	Bucks,	Pa.	Variola.
Hughes, James H.	Chester,	Pa.	Remittent Fever.
Hunter, John A.	Philadelphia,	Pa.	Digestion.

NAME.	COUNTY.	STATE.	SUBJECT OF THESIS.
Hutchison, William N.	Chester,	Pa.	Emetics.
Hylton, John Dunbar	Burlington,	N. J.	Typhoid Eever.
Ingham James V.	Philadelphia.	Pa.	Empiricism.
Irvin, Joseph S. K.	Cumberland,	Pa.	Dyspepsia.
Jacobs, Luther D.	Franklin,	Pa.	Placenta Prævia.
James, John E.	Philadelphia,	Pa.	Lithotomy.
Jamieson, Robert A.	St. Clair,	Mich.	Enteric Fever.
Jenks, William Furness	Philadelphia,	Pa.	Paracentesis Thoracis.
Johnson, William H.	Philadelphia,	Pa.	Acne.
Kemp, Simon A.	Montreal,	Can. E.	Spotted Fever.
Knox, Samuel B. P.	Fayette,	Pa.	Alcohol.
Kreider, Jacob B.	Centre,	Pa.	Bronchitis.
Lambdin, Alfred C.	Philadelphia,	Pa.	Nature of Inflammation.
Lancaster, Thomas	Philadelphia,	Pa.	Moral and Physical Culture of Women.
Lesh, John H.	Northampton,	Pa.	Pleurisy.
Lesher, Aug. H.	Berks,	Pa.	Typhoid Fever.
Light, Amos B.	Lebanon,	Pa.	Digestion.
Lockwood, John C.	Kent,	Del.	Typhoid Fever.
Long, Isaac S.	Warren,	N. J.	Cerebro-Spinal Meningitis.
Lymer, Richard H.	Mercer,	Pa.	Epidemic Influence.
Magraw, James M.	Harford,	Md.	Intermittent Fever.
Markoe, James, jr.	Philadelphia,	Pa.	Iritis.
Marmion, George H. I.	Jefferson,	Va.	The Study of Medicine.
Marmion, William V.	Jefferson,	Va.	Menorrhagia.
McCreary, John H	Lancaster,	Pa.	External Scrofula.
McDowell, Francis Buck	Philadelphia,	Pa.	Hepatitis.
McKinney, Edmund	Montgomery,	Tenn.	Ozæna.
McKnight, Joseph G.	Lorain,	Ohio.	The Being a Unit ever Changing.
McPherson, Andrew G.	Perth,	Can. W.	Neuralgia.
Mench, Martin L.	Union,	Pa.	Conduct of the Physician in the Sick-room.
Metzger, George W.	Lycoming,	Pa.	Hemorrhage.
Miller, Alex. M.	Berks,	Pa.	Myology.
Morrison, Samuel Wilmer	Lancaster,	Pa.	Acute Rheumatism.
Murphy, James	Norfolk,	Can. W.	Morbid Condition of the Blood.
Norris, Herbert	Philadelphia,	Pa.	Epilepsy.
O'Reilly, Robert	Philadelphia,	Pa.	Amputations and Resections in Military Surgery.
Orth, Harry L.	Dauphin,	Pa.	Idiopathic Erysipelas.
Osborne, Richard H. G.	New Castle,	Del.	The Present State of Mental Physiology.
Paine, Charles F.	Northampton,	Pa.	Epidemic Cholera.
Parke, Alexander G. B.	Chester,	Pa.	Labour.
Pennepacker, Henry	Delaware,	Pa.	Building and Repairing the Human Structure.
Petrie, James A.	Warren,	N. J.	Morbus Coxarius.
Pinney, Charles H. (M. D.)	Lorain,	Ohio.	Lithotomy.
Reber, Chambers S.	Berks,	Pa.	Physical Diagnosis of the Respiratory Organs.
Reece, Madison (M. D.)	Knox,	Ill.	Dysentery.
Reed, Edward H.	Mercer,	N J.	Typhoid Fever.
Reed, John A.	Bracken,	Ky.	Cholera Infantum.
Reed, Mengel	Bedford,	Pa.	Gall Stones.
Rex, Thomas A. (M. D.)	Philadelphia,	Pa.	Hospital Gangrene.
Risk, William H.	Philadelphia,	Pa.	Podagra.
Ritter, Frederic W.	Philadelphia,	Pa.	Sulphate of Quinia.
Rouse, Morris D.	Monroe,	Pa.	Dyspepsia.
Ruth, Melancthon L.	Philadelphia,	Pa.	Specific Vaginitis.
Ryall, Albert P.	Bedford,	Tenn.	Pneumonia.

NAME.	COUNTY.	STATE.	SUBJECT OF THESIS.
Santee, Eugene I.	Philadelphia,	Pa.	Vaccination.
Schell, Joseph G.	Frederick,	Md.	Pneumonia.
Seymour, Fletcher T.	Fayette,	Tenn.	Scarlatina.
Sheilds, George W.	Philadelphia,	Pa.	Typhus Fever.
Sibbet, Robert Lowry	Cumberland,	Pa.	Alimentary Secretions.
Smith, Linton	New Castle,	Del.	Epidemic Cholera.
Smith, Thomas J.	Salem,	N. J.	Abortion.
Smith, William H. Clay	Philadelphia,	Pa.	Continued Fever.
Smyth, Francis G.	Philadelphia,	Pa.	Typhoid Fever.
Snodgrass, James F.	Chester,	Pa.	Typhoid Fever.
Spayd, Charles W.	Philadelphia,	Pa.	Remittent Fever.
Spooner, Edward A. (M. D.)	Philadelphia,	Pa.	Infantile Alimentation.
Sproul, Obadiah Herbert	Hunterdon,	N. J.	Scarlatina.
Sterling, William H.	Burlington,	N. J.	Nature of Malaria.
Stiles, George M.	Burlington,	N. J.	Diphtheria.
Stillé Henry M.	Philadelphia,	Pa.	General Pathology of Diarrhœa.
Strawbridge, George	Philadelphia,	Pa.	Glaucoma.
Stryker, Samuel S., jr.,	Mercer,	N. J.	Hemiplegia.
Swain, Humphrey	Cape May,	N. J.	Typhoid Fever.
Tallon, John E. (M. D.)	Orleans,	La.	Variola.
Taylor, Isaac N.	Erie,	Pa.	Nutrition.
Thatcher, Edward C.	Philadelphia,	Pa.	Carbuncle.
Thirwechter, William J.	Berks,	Pa.	Dyspepsia.
Thomas, Francis	Montgomery,	Md.	Signs of Pregnancy.
Thome, Charles V.	Lebanon,	Pa.	Rubeola.
Tonner, John Alexis	New Castle,	Del.	Hospital Gangrene.
Townsend, Stephen (M. D.)	Philadelphia,	Pa.	Intermittent Fever.
Tressler, Josiah E.	Perry,	Pa.	The Physician.
Van Buskirk, Michael B.	Monroe,	Pa.	Typhoid Fever.
Walker, Robert L.	Alleghany,	Pa.	Cinchona.
Ward, John W.	Salem,	N. J.	Acute Dysentery.
Weed, Ithamar B. (M. D.)	Meigs,	Ohio.	Cholera.
Weightman, John F.	Philadelphia,	Pa.	Ovariotomy.
Weirick, William H.	Union,	Pa.	Digestion.
Wenger, Adam, jr.	Lancaster,	Pa.	Acute Pneumonia.
Weyand, Isaac S.	Cass,	Ind.	Opium.
Whedon, Robert A. (M. D.)	Lenawee,	Mich.	The M. D.
Whisler, Simon M.	Cumberland,	Pa.	Erysipelas.
Whitaker, Benjamin R.	Chester,	Pa.	Medicines.
Whittaker, James T.	Kenton,	Ky.	Reproduction.
White, John S.	Lancaster,	Pa.	Acute Pneumonia.
Wierich, Augustus, jr.	Jo Daviess,	Ill.	Dysentery.
Wiestling, John Weir	Dauphin,	Pa.	Intermittent Fever.
Wilson, Adam H.	Philadelphia,	Pa.	Catarrh.
Wireback, Isaiah J.	Bucks,	Pa.	Typhoid Fever.
Wise, George G.	Philadelphia,	Pa.	Typhus Fever.
Woodvine, Denton G.	Hampden,	Mass.	Scarlatina.
Yeakel, Isaac B.	Berks,	Pa.	Uræmia.
Yocum, Joseph J.	Schuylkill,	Pa.	Influence of the Mind in Medicine.
Zeigler, Elijah R.	Union,	Pa.	Medical Diagnosis.

At a Public Commencement, held in July, 1865, the following gentlemen received the Degree of Doctor of Medicine.

Drinker, Charles	Susquehanna,	Pa.	Pulmonary Phthisis.
Palethorp, Jno. H.	Philadelphia,	Pa.	Ergota.
Troxell, Francis P.	Lehigh,	Pa.	Diphtheria.

Total, 165.

THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA.

The Forty-Second Winter Session of Lectures will commence on Monday, the 8th of October, with a General Introductory Lecture by one of the Professors. The regular lectures will begin the day after. The Session will terminate on the last day of February.

Charles D. Meigs, M. D., { Emeritus Professor of Obstetrics and Diseases of Women and Children.

Institutes of Medicine, &c., ...	by Prof. Robley Dunglison, M. D.
General, Descriptive, and Surgical Anatomy, .	" Joseph Pancoast, M.D.
Institutes and Practice of Surgery, . .	" Samuel D. Gross, M.D.
Practice of Medicine, ...	" S. Henry Dickson, M. D.
Obstetrics and Diseases of Women and Children,	" Ellerslie Wallace, M. D.
Chemistry, ...	" B. Howard Rand, M. D.
Materia Medica and General Therapeutics, .	" John B. Biddle, M. D.
Lecturer on Clinical Medicine, . . .	J. M. DaCosta, M. D.
Demonstrator of Anatomy, ...	Wm. H. Pancoast, M. D.

To enlarge the already abundant opportunities for Clinical Instruction, a Clinic will be held daily at the College—the Surgical department being conducted by Professors Gross and Pancoast; the Obstetrical by Professor Wallace; and the Medical by Dr. J. M. DaCosta. The lectures are so arranged as to permit the student to attend the clinics of the Pennsylvania Hospital, and the Philadelphia Hospital.

The "Summer Course," which began on the second of April, and is conducted by Members of the Faculty in conjunction with others, will be resumed in September, after the recess in July and August, and be continued until the 6th of October.

FEES.

To each Member of the Faculty—as in all the schools of Philadelphia and New York—$20; in all, ...	$140
Matriculation fee, ...	5
Graduation fee, ...	30

ROBLEY DUNGLISON, M. D.,
Dean of the Faculty.

LIST OF GRADUATES OF THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA.

At a public commencement, held on the 10th of March, 1866, the Degree of Doctor of Medicine was conferred on the following gentlemen by the Hon. Edward King, LL.D., President of the Institution; after which a valedictory address to the graduates was delivered by Prof. Rand:—

NAME.	STATE OR COUNTRY.	SUBJECT OF THESIS.
Alexander, William J.	Pennsylvania.	Spotted Fever.
Allis, Oscar Huntington	Pennsylvania.	Tetanus.
Applegate, Charles H.	Indiana.	Duties of Practitioners.
Arndt, Zaccheus P.	Pennsylvania.	Gonorrhœa.

NAME.	STATE OR COUNTRY.	SUBJECT OF THESIS.
Bard, Cephas L.	Pennsylvania.	Gunshot Wounds.
Barrett, Frederick	Pennsylvania.	Endocarditis.
Bartholomew, William	Pennsylvania.	Irritation and Sympathy.
Beane, George W.	Pennsylvania.	Gastritis.
Berntheizel, George W.	Pennsylvania.	Professional Adaptation.
Berry, Daniel	Illinois.	Pneumonia.
Bixler, Jacob R.	Pennsylvania.	Symptoms of Inflammation.
Blackwood, Thomas J.	Pennsylvania.	Menstruation.
Brehm, Samuel H.	Pennsylvania.	The Repair of Tissues.
Brother, Ferdinand (M. D.)	New Jersey.	Diphtheria.
Brown, J. Alpheus	Ohio.	Dysentery.
Brown, Nathaniel W.	Pennsylvania.	Pain.
Bryant, John (M. D.)	Missouri.	Spotted Fever.
Buck, Benj S.	Pennsylvania.	Gonorrhœa.
Buffington, Alexander L.	Pennsylvania.	Inflammation.
Burke, George W.	Pennsylvania.	Gunshot Wounds.
Burroughs, John E.	Texas.	Congestive Fever.
Butcher, Henry B.	Pennsylvania.	Gunshot Wounds.
Cabanne, James S.	Missouri.	Lupus.
Cheeseman, George	Pennsylvania.	Diphtheria.
Christy, James H.	Pennsylvania.	Typhoid Fever.
Clendinen, Moses W.	Illinois.	Toxicology.
Coffman, Victor H.	Iowa.	Typhus Fever.
Cogshall, Bela, jr.	Michigan,	Eclampsia Puerperalis.
Conery, William B.	Kentucky.	Hunterian Ligation to prevent Destructive Inflammation.
Culbertson, Samuel D.	Pennsylvania.	Erysipelas.
Culbreth, George S.	Delaware.	The Study of Medicine.
Daingerfield, Joseph Faunt Le Roi	Kentucky.	Auscultation in Pulmonary Diseases.
Dare, George S.	Pennsylvania.	Erysipelas.
Dick, John W.	Pennsylvania.	History and Progress of Medicine.
Dodge, Samuel D.	Arkansas.	The Ear.
Donnelly, John F.	Pennsylvania.	Syphilis in Infants.
Dundore, Adam J.	Pennsylvania.	Morbilli.
Easley, Andrew	Virginia.	Medical Ethics.
Ellison, L. Frank	Delaware.	Croup.
Ewing, James B.	Pennsylvania.	Treatment of Inflammation.
Ewing, John	Pennsylvania.	Scarlatina.
Ferguson, James B.	Canada West.	Physiology of Digestion.
Fitzgerald, J. A.	Indiana.	Inflammation.
Flood, James Ramsay	Canada West.	Opium, Magnum Dei Donum.
Foster, William S.	Pennsylvania.	Puerperal Fever.
Fritts, Thomas J. (M. D.)	Indiana.	Pathological Conditions of the Blood.
Fuller, Alson	North Carolina.	Diphtheria.
Gelwix, James Montgomery	Pennsylvania.	Menstruation.
Gibson, William, jr.	Pennsylvania.	Pertussis.
Gillespie, James L. (M.D.)	West Virginia.	Colic.
Gilpin, Fletcher	Pennsylvania.	Tonsillitis.
Gordon, James	New York.	Vis Medicatrix Naturæ.
Graham, George S.	Pennsylvania.	Coxalgia.
Gregg, James S.	Indiana.	Hospital Gangrene.
Gregg, Robert J.	Missouri.	Neuralgia.
Griffin, Tyler	Kentucky.	Oleum Morrhuæ.
Griggs, William O.	Pennsylvania.	The Principles of Surgery.
Guerrant, Richard P.	Kentucky.	Asiatic Cholera.
Guss, Isaac	Pennsylvania.	Spotted Fever.

NAME.	STATE OR COUNTRY.	SUBJECT OF THESIS.
Hamilton, Alexander P.	Kentucky.	Intermittent Fever.
Harmon, Byron R.	Pennsylvania.	Incompatibles.
Hassler, William A.	Pennsylvania.	Acute Dysentery.
Hill, John (M. D.)	Ohio.	Diphtheria.
Hockaday, William L.	Kentucky.	Wounds.
Hodgens, Samuel G.	Pennsylvania.	Nutrition.
Hoffman, Walter J.	Pennsylvania.	Zinc.
Hollenbach, Theodore F.	Pennsylvania.	The Young Obstetrician.
Hornor, Joseph H.	New Jersey.	Anæsthetics.
Huffman, D. Clark	Pennsylvania.	Physiological Effects of Motion.
Hunter, Thomas S.	Ohio.	Relations of Chemistry to Medicine.
Huston, Joseph H.	Pennsylvania.	Erysipelas.
Hutchins, Edward R.	New Hampshire.	Dengue.
Hyndman, Samuel E.	Ohio.	Urine.
Jackson, William M.	Pennsylvania.	Menstruation.
Kennedy, Thomas J.	Tennessee.	Soteria Doctrina.
Kennedy, Robert S.	Pennsylvania.	Alcohol.
King, George A.	Pennsylvania.	Hospital Gangrene.
Klingensmith, Theodore P.	Pennsylvania.	Dyspepsia.
Knight, John	Pennsylvania.	Diagnosis.
Knipe, Septimus A.	Pennsylvania.	Hernia.
Koch, Frederick W.	Michigan.	Scrofula or Struma.
Landon, Hannibal (M.D.)	Ohio.	Erysipelas.
Lankford, Alvin P.	Missouri.	Septenary Periods.
Leech, Thomas F.	Indiana.	The Military Surgeon.
Levan, Daniel Henry	Pennsylvania.	Anæsthetics.
Lindley, Henry S.	Pennsylvania.	Dysentery.
Long, Robert W.	Indiana.	Medical Diagnosis.
Loughridge, Samuel O.	Ohio.	Dyspepsia.
Lynde, Uri Colvin (M. D.)	New York.	Acute Peritonitis.
Mackie, Benjamin S.	Louisiana.	Pneumonia.
Macpherson, William	Pennsylvania.	Malarial Diseases.
Madden, Edmund H.	New Jersey.	Resina Flava.
Magee, T. James	Pennsylvania.	Signs of Pregnancy.
Mason, Jos. Ritner (M.D.)	Pennsylvania.	Medical Diagnosis.
Matlack, Richard B.	Tennessee.	Remittent Fever.
Matter, George F.	Pennsylvania.	Acute Dysentery.
Maxwell, James A.	Pennsylvania.	Enteric Fever.
May, James Rundlet	New Hampshire.	Primary Syphilis.
McCormick, A. Y.	Maryland.	Bismuthi Subnitras.
McDowell, James W.	Illinois.	Luxation of the Hip-joint and the Agents which oppose its Reduction.
McElroy, James F.	Kentucky.	Cheerfulness.
McIntosh, John	Nova Scotia.	Scarlatina.
McMunn, John C.	Pennsylvania.	Diphtheria.
McQuesten, E. Forrest	New Hampshire.	Indigestion.
McVicker, James P.	Pennsylvania.	Scirrhus of the Mamma.
Mengle, Isaac L.	Pennsylvania.	Etiology of Disease.
Meredith, William H.	Pennsylvania.	Dysentery.
Moore, Isaac H.	Pennsylvania.	The Tongue Symptomatic of Disease.
Mueller, Henry	Ohio.	Moschus.
Munn, Charles W.	Pennsylvania.	Diabetes Mellitus.
Murray, Ransom N.	Michigan.	Pneumonia.
Musser, John Henry	Pennsylvania.	Iodine.
Napheys, George H.	Pennsylvania.	Intussusceptio Intestinorum.
Newberry, Thomas L.	Kentucky.	Typhoid Fever.
Newell, Wm. M. (M. D.)	Illinois.	Evidences of Design in the Organism of Man.
Newton, P. C.	Kansas.	Mountain Fever.

NAME.	STATE OR COUNTRY.	SUBJECT OF THESIS.
O'Leary, Arthur	New York.	Strabismus.
Orvis, Charles	Illinois.	Pneumonia.
Owens, Benjamin F.	Kentucky.	Scarlatina.
Patterson, Edwin S.	Pennsylvania.	Rubeola.
Patton, Frederick H.	West Virginia.	Life.
Peck, Alexander L.	New Brunswick.	The Human Fæces.
Perkins, Finis M.	Kentucky.	Pneumonia.
Perry, Matthias Rizer	Kentucky.	Contagion.
Peterson, Henry B.	Kentucky.	Air, and its Effects on Health.
Peyton, John C.	Tennessee.	Stricture of the Urethra.
Phillips, William D.	Arkansas.	Epilepsy.
Price, Daniel T.	Mississippi.	Chloroform.
Rahauser, George G.	Pennsylvania.	Podagra.
Rebman, Lawrence S.	Delaware.	Dislocations.
Reed, Jacob, jr.	Pennsylvania.	Alkaline Sulphites in Zymotic Diseases.
Reed, Jesse J.	Pennsylvania.	Scarlatina.
Rhoads, George W.	Indiana.	Digestion.
Righter, Washington	Pennsylvania.	Opium.
Roberts, Hiram S.	Illinois.	Camp Diarrhœa.
Rodgers, David C. C.	Mississippi.	Disease and its Causes.
Ross, James Brice	Kentucky.	Primary Syphilis.
Russell, Ephraim P.	Kentucky.	Cerebro-spinal Meningitis.
Russell, Ezra R.	Illinois.	Gonorrhœa.
Sallade, Franklin L.	Pennsylvania.	Enteric Fever.
Sears, Alfred A.	Illinois.	Nicotiana Tabacum.
Semans, William R.	Pennsylvania.	Dyspepsia.
Shaeffer, Brett Randolph	Mississippi.	Digestion.
Shurtleff, Benjamin (M.D.)	Illinois.	Gonorrhœa distinct from Non-Specific [Urethritis.
Snodgrass, James H.	Pennsylvania.	Verrucæ.
Stockton, Thomas C. M.	Pennsylvania.	Inflammation.
Thackeray, William T.	Pennsylvania.	Hospital Gangrene.
Townsend, Ralph M.	Pennsylvania.	Cinchona.
Trout, Henry S.	Pennsylvania.	Hereditary Transmission of Disease.
Warren, John S.	New Hampshire.	Anæmia.
Way, Jacob H.	Pennsylvania.	Alveolar Abscess.
Weathers, Lucien V.	Kentucky.	Peritonitis.
Webb, John W.	New Jersey.	Vexations and Pleasures of the Physi-
Webb, William H.	Pennsylvania.	Enteric or Typhoid Fever. [cian.
Weber, Reinhard H.	Germany.	Diphtheria
Wheeler, William G.	Kentucky.	Medical Influence of the Mind.
White, James M.	West Virginia.	Mercury.
Whitehead, Alfred M.	Ohio.	Scarlatina.
Wilson, James E.	Pennsylvania.	Rheumatism.
Wilson, John C.	Pennsylvania.	Idiopathic Erysipelas.
Wilson, N. M.	Pennsylvania.	Dysentery.
Wilson, William M.	Kentucky.	Man and his Organization.
Witmer, Abraham H.	Pennsylvania.	Bronchitis.
Worthington, David J.	Pennsylvania.	The Circulation.
Yundt, W. Scott	Pennsylvania.	Gunshot Wounds of the Joints.

Of these there were from—Pennsylvania, 81; Kentucky, 16; Illinois, 9; Ohio, 8; Indiana, 7; New Jersey, 4; Missouri, 4; New Hampshire, 4; Michigan, 3; Delaware, 3; West Virginia, 3; New York, 3; Tennessee, 3; Mississippi, 3; Arkansas, 2; Canada West, 2; Texas, 1; Iowa, 1; Virginia, 1; North Carolina, 1; Louisiana, 1; Maryland, 1; Nova Scotia, 1; Kansas, 1; New Brunswick, 1; Germany, 1. Total, 165.

The number of Matriculates of the Session 1865–6 was 428.

COLLEGE OF PHYSICIANS AND SURGEONS.

CORNER OF TWENTY-THIRD STREET AND FOURTH AVENUE, NEW YORK.

ANNUAL ANNOUNCEMENT.—SIXTIETH SESSION, 1866–67.

During the Spring, Summer, and Fall, medical instruction is carried on by means of Cliniques delivered at the College and at the various Hospitals and Infirmaries of the city, and a Preliminary Course of Lectures immediately preceding the Regular Winter Session.

FACULTY OF MEDICINE.

EDWARD DELAFIELD, M. D, President, and Professor Emeritus of Obstetrics.
ROBERT WATTS, M. D., Professor of Anatomy.
WILLARD PARKER, M. D., Professor of the Principles and Practice of Surgery and Surgical Anatomy.
THOMAS M. MARKOE, M. D., Professor Adjunct of Surgery.
ALONZO CLARK, M. D., Professor of Pathology and Practical Medicine.
JOHN C. DALTON, M. D., Professor of Physiology and Microscopic Anatomy.
SAMUEL ST. JOHN, M. D., Professor of Chemistry.
T. GAILLARD THOMAS, M. D., Professor of Obstetrics and the Diseases of Women and Children.
JOHN T. METCALFE, M. D., Professor of Clinical Medicine.
HENRY B. SANDS, M. D., Lecturer Adjunct on Anatomy.
FREEMAN J. BUMSTEAD, M. D, Lecturer on Materia Medica and on Venereal Diseases.
ERSKINE MASON, M. D., Demonstrator of Anatomy and Curator of the College Museum.

In the plan of instruction adopted in this institution, Clinical Teaching constitutes an important and prominent feature, all the practical subjects treated of in the Didactic Course being fully illustrated at the bedside. In the furtherance of this object, the extensive Hospitals of New York, of which the New York Hospital, the Bellevue Hospital, the Charity Hospital, Blackwell's Island, and the New York Eye Infirmary are the largest and most efficient, furnish ample fields for instruction and study. To all of these the Faculty of the College resort for the purposes of practical instruction, Cliniques being held daily in one or more of them—in the Bellevue Hospital by Professors CLARK, PARKER, METCALFE, THOMAS, and SANDS; in the New York Hospital by Professors PARKER, MARKOE, and SANDS; at the Charity Hospital, Blackwell's Island, by Drs. BUMSTEAD and MASON; and at the New York Eye Infirmary by Drs. BUMSTEAD and SANDS.

Besides the Clinical Lectures given at the Hospitals, as above, there are six Cliniques each week at the College Building.

The *Preliminary Fall Course* for 1866 will commence on Monday, the 10th of September, and continue five weeks, until the opening of the Regular Course in October. This course will consist of from two to three lectures daily on special subjects, in addition to the College Cliniques.

REGULAR COURSE.

The Regular Course of Lectures for the Session of 1866–7, will commence on Monday, the 15th of October, 1866, and will continue until the second Thursday of March following. This course will consist of from five to six daily Lectures in the various departments of Medicine and Surgery, both elementary and practical, together with Daily Clinical Lectures, delivered both at the College and at the larger Hospitals.

FEES.

Matriculation Fee, $5.
Fees for the full Course of Lectures by all the Professors, $140; for each separate ticket, $20.
Ticket of the Demonstrator of Anatomy, $10.
Graduation Fee, $30.
The Tickets are expected to be taken out at the beginning of the Session.

Letters requiring information should be directed to the *Secretary of the Faculty, College of Physicians and Surgeons, corner of Twenty-Third Street and Fourth Avenue, New York.*

BOYLSTON MEDICAL PRIZE QUESTIONS.

The Boylston Medical Committee, appointed by the President and Fellows of Harvard University, consists of the following Physicians:—

Edward Reynolds, M. D.	J. B. S. Jackson, M. D.	Charles G. Putnam, M. D.
John Jeffries, M. D.	J. Mason Warren, M. D.	Morrill Wyman, M. D.
S. D. Townsend, M. D.	D. H. Storer, M. D.	Henry J. Bigelow, M. D.

At the Annual Meeting held June 6th, the Premium was awarded to S. G. Webber, M. D., for the best Dissertation on *Cerebro-Spinal Meningitis.*

The following are the questions proposed for 1867:—

1. *Pathology and Treatment of Diseases of the Skin.*
2. *Amputation, its Varieties and Occasional Results, Gangrene and Necrosis.*

Dissertations on these subjects must be transmitted, postpaid, to John Jeffries, M. D., *on or before the first Wednesday in April,* 1867.

The following questions are proposed for 1868:—

1. *The Physical and Mental Influences of the United States and Canada upon Immigrant European Races.*
2. *Question of the Contagiousness of Asiatic Cholera in the United States.*

The author of the best dissertation on either of the subjects proposed for 1867 will be entitled to a premium of *ninety dollars,* or a gold medal of that value.

The author of the best dissertation on either of the subjects proposed for 1868 will be entitled to a premium of *one hundred dollars,* or a gold medal.

Each dissertation must be accompanied by a sealed packet, on which shall be written some device or sentence, and within which shall be inclosed the author's name and residence. The same device or sentence is to be written on the dissertation to which the packet is attached.

The writer of each dissertation is expected to transmit his communication to the President, John Jeffries, M. D., in a legible handwriting, within the time specified.

All unsuccessful dissertations are deposited with the Secretary, from whom they may be obtained, with the sealed packet unopened, if called for within one year after they have been received.

By an order adopted in 1826, the Secretary was directed to publish annually the following votes:—

1st. That this Board do not consider themselves as approving the doctrines contained in any of the dissertations to which premiums may be adjudged.

2d. That in case of publication of a successful dissertation, the author to be considered as bound to print the above vote in connection therewith.

J. MASON WARREN,
Secretary.

Publishers of Newspapers and Medical Journals throughout the country are respectfully requested to notice the above.

FALL AND WINTER EXAMINATIONS.

DRS. DUNGLISON, DUER, AND MAURY,
1026 Chestnut St., Philadelphia.

The Fall Course of Examinations will begin on Monday, September 3d, and continue until the commencement of the Winter Examinations in October.

The regular Winter Course for the session of 1866–7, on all the branches taught in the Medical Schools, will commence early in October. The Course will be fully illustrated by a Cabinet of Materia Medica, Plates, Specimens, &c.

Fee . . . . . $30.

For further particulars apply to

RICHARD J. DUNGLISON, M. D., 39 S. Eleventh St.
EDWARD L. DUER, M. D., 1704 Arch St.
FRANK F. MAURY, M. D., 1005 Walnut St.

BELLEVUE HOSPITAL MEDICAL COLLEGE—CITY OF NEW YORK.

SESSIONS FOR 1866–67.

The Faculty take pleasure in referring to the cumulative evidence of the importance of the movement in behalf of Medical Education inaugurated by this College The class in attendance during the Session of 1865–66, numbered 470, the number of graduates being 172.

To meet the requirements of so large a class, ample accommodations are now afforded in the new building within the hospital grounds, erected for the Bureau of Out-door Relief—a new department of public charity which, in addition to its more immediate beneficent results, will extend the resources of practical instruction.

The Faculty would invite the attention of the profession to another important movement designed to promote the interests of Medical Education, viz , providing ample clinical and didactic instruction throughout the collegiate year. In accordance with a plan which was entertained when the College was established, a Summer Course of Instruction has been added to the Autumnal and the Winter Course; and for the Summer Session a corps of Professors and Lecturers have been specially appointed. The usual preliminary Autumnal Session will commence on Wednesday, September 12, 1866, and continue four weeks. Instruction during this term will, as heretofore, consist of didactic lectures on special subjects, and daily clinical lectures. The lectures during this term will be given exclusively by members of the Faculty. The Regular Winter Session will commence on Wednesday, October 10, 1866, and end about the first of March, 1867. The Summer Session will commence on the first of April, 1867, and end in the following July. There will thus be two vacations in the collegiate year, viz , a spring vacation of a month, and a summer vacation of about two months. Attendance on the Summer Courses of instruction is entirely voluntary, but it is designed to offer in these courses abundant inducements to those who may desire to prosecute their studies in this city during the summer.

The Faculty announce with pleasure the appointment of W. H. Van Buren, M. D., as Professor of Diseases of the Genito-Urinary System. Professor Van Buren will take part in both the Winter and the Summer Session.

FACULTY.

ISAAC E. TAYLOR, M. D., *President.*
AUSTIN FLINT, Jr., M. D., *Secretary.*

James R. Wood, M. D., Professor of Operative Surgery and Surgical Pathology.
Frank H. Hamilton, M. D., Professor of Military Surgery, Fractures and Dislocations, and the Principles of Surgery.
Lewis A. Sayre, M. D., Professor of Orthopedic Surgery.
Alexander B. Mott, M. D., Professor of Surgical Anatomy.
W. H. Van Buren, M. D , Professor of Diseases of the Genito-Urinary System.
Isaac E. Taylor, M. D.,
George T. Elliot, M. D.,
Fordyce Barker, M. D., } Professors of Obstetrics and the Diseases of Women and Children.
Benjamin W. McCready, M. D., Professor of Materia Medica and Therapeutics.
Stephen Smith, M. D., Professor of Descriptive and Comparative Anatomy.
Austin Flint, M. D., Professor of the Principles and Practice of Medicine.
R. Ogden Doremus, M. D., Professor of Chemistry and Toxicology.
Austin Flint, Jr., M. D., Professor of Physiology and Microscopy.
N. R. Mosely, M. D., Demonstrator of Anatomy.
J. W. Southack, Jr., M. D., Assistant Demonstrator of Anatomy and Prosector to the Chair of Operative Surgery and Surgical Pathology.
A. W. Wilkinson, M. D., Assistant to Chair of Chemistry and Toxicology.
Henry G. Piffard, M. D., Assistant to Chair of Principles and Practice of Medicine.
Lucien Damainville, M. D., Assistant to Chair of Military Surgery, etc. etc.

FACULTY OF SUMMER SESSION.

Henry D. Noyes, M. D., Professor of Ophthalmology.
J. Lewis Smith, M. D., Lecturer on Morbid Anatomy.
Foster Swift, M. D., Lecturer on Diseases of the Skin.
Prof. W. H. Van Buren, M. D., Lecturer on Diseases of the Genito-Urinary System.
Prof. R. Ogden Doremus, M. D., Lecturer on Animal Chemistry.
Prof. Austin Flint, Jr., M. D., Lecturer on Microscopical Anatomy.
Prof. George T. Elliot, Jr., M. D., Lecturer on Diseases of Children.

A distinctive feature of the method of instruction in this College, is the union of

BELLEVUE HOSPITAL MEDICAL COLLEGE—Continued.

clinical and didactic teaching. All the lectures are given within the hospital grounds. During the Regular Winter Session, in addition to four didactic lectures on every week day, except Saturday, two or three hours are daily allotted to clinical instruction. The union of clinical and didactic teaching will also be carried out in the Summer Session; the newly appointed teachers in this Faculty being physicians and surgeons to the great Charity Hospital on Blackwell's Island. Further details respecting the method of instruction, and the vast opportunities for the study of disease, witnessing surgical and obstetrical operations, the prosecution of anatomy, etc., afforded by the Bellevue Hospital, the Blackwell's Island Charity Hospital, and other public institutions of the great Metropolis, will be contained in the annual circular to be issued during the summer.

Fees for tickets to all the lectures during the Autumnal and the Regular Winter Session,* $140.

Tickets for any of the several departments may be taken out separately.

Matriculation fee, $5.

Demonstrator's ticket, $10.

Graduation fee, $30.

Students who have attended two full courses in other accredited schools, receive all the tickets for $70, exclusive of the Matriculation fee. Students who have attended two full courses in this College, or after one full course in this College, having previously attended a full course in some other accredited schools, are required to matriculate only. Graduates of other accredited schools, after three years, dating from the time of graduation to the end of the term, are required to matriculate only; prior to three years they receive a general ticket for $70.

Payment of fees is invariably required at the commencement of the Session. There are no exceptions to this rule.

The Fees and Regulations for the Summer Session will be announced in the annual circular.

Students, on arriving in the city, are requested to report at once at Bellevue Hospital, situated on the East River, between 26th and 28th Streets, and inquire for the Janitor of the College, who will take pains to aid them in securing comfortable accommodations, without delay.

Entrance to the Hospital is on 26th Street.

For the Annual Circular, giving further information, address the Secretary of the Faculty, Professor Austin Flint, Jr., Bellevue Hospital Medical College.

SUMMER SCHOOL OF MEDICINE.

No. 920 Chestnut Street, Philadelphia.

ROBERT BOLLING, M. D., JAS. H. HUTCHINSON, M. D., H. LENOX HODGE, M. D., EDWARD A. SMITH, M. D, D. MURRAY CHESTON, M. D., HORACE WILLIAMS, M. D.

The Summer School of Medicine will begin its second term on March 1st, 1866, and students may enjoy its privileges without cessation until October.

The regular Course of *Examinations* and *Lectures* will be given during April, May, June, and September, upon

Anatomy, Obstetrics,
Surgery, Materia Medica,
Chemistry, Practice of Medicine.
Physiology,

The subjects will be studied by the aid of Specimens, Manikins, Demonstrations, and Clinical Examinations of Patients.

Students will be given access to the Pennsylvania, Episcopal, and Children's Hospitals. The employment of the Microscope, and the microscopic appearance of the tissues and fluids in health and disease, with the chemical tests and reactions, will also be taught.

Fee . . . . . $50.

For further information apply to

H. LENOX HODGE, M. D.,
N. W. corner Ninth and Walnut Streets.

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* The fees in this College are raised in common with the Colleges of New York and Brooklyn, Philadelphia and Boston.

FISKE MEDICAL PRIZE QUESTION.

The Trustees of the Fiske Fund, at the Annual Meeting of the Rhode Island Medical Society, held in Providence, June 6th instant, gave notice that no award had been made on the questions proposed by them for the present year.

They propose the following subjects for 1867, viz:—

1st. PYÆMIA; CAUSES, PATHOLOGY AND TREATMENT.

2d. VACCINATION. WHY DOES IT EVER FAIL TO GIVE PERFECT PROTECTION?

3d. CHOLERA. IS IT INFECTIOUS?

For the best dissertation on either of these subjects the Trustees will pay a premium of One Hundred Dollars.

Every competitor for a premium is expected to conform to the following regulations, viz:—

To forward to the Secretary of the Trustees, on or before the first day of May, 1867, free of all expense, a copy of his dissertation, with a motto written thereupon, and also accompanying a sealed packet, having the same motto inscribed upon the outside, and his name and place of residence within.

Previously to receiving the premium awarded, the author of the successful dissertation must transfer to the Trustees all his right, title, and interest in and to the same, for the use, benefit, and behoof of the Fiske Fund.

Letters accompanying the unsuccessful dissertations will be destroyed by the Trustees, unopened, and the dissertations may be procured by their respective authors, if application be made therefor within three months.

SYLVANUS CLAPP, M. D., North Providence,
OTIS BULLOCK, M. D., Warren,
J. W. C. ELY, M. D, Providence,
} *Trustees.*

S. Aug. Arnold, M. D., Providence, *Secretary.*

UNIVERSITY OF MARYLAND.

The Fifty-Ninth Session of the School of Medicine, in the University of Maryland, will commence on Monday, the 15th of October, 1866, and will end on the 1st of March, 1867.

FACULTY OF PHYSIC.

Nathan R. Smith, M. D., Professor of Surgery.
Wm. E. A. Aikin, M. D., LL.D., Professor of Chemistry and Pharmacy.
G. W. Miltenberger, M. D., Professor of Obstetrics and the Diseases of Women and Children.
Richard McSherry, M. D., Professor of Principles and Practice of Medicine.
Christopher Johnston, M. D., Professor of General, Descriptive, and Surgical Anatomy.
Samuel C. Chew, M. D., Professor of Materia Medica and Therapeutics.
Frank Donaldson, M. D., Professor of Physiology, Hygiene, and General Pathology.
James H. Butler, M. D., Demonstrator of Anatomy and Adjunct to the Professor of Anatomy.

The fees for the full course are $105.00. For Matriculation, $5.00. For Practical Anatomy, $10.00.

The Baltimore Infirmary is a large Hospital attached to the College. The Infirmary is an admirable school for clinical instruction, which is open every day throughout the year to the students, where they may witness surgical operations, observe practice, and attend clinical lectures by the various professors at all seasons, without any additional charge. There is always a staff of graduates resident in the Infirmary, besides a limited number of students who are admitted as Clinical Assistants.

Anatomical material is abundant for the study of practical anatomy.

Circulars containing fuller information may be obtained by application to any member of the Faculty.

GEORGE W. MILTENBERGER, M. D., *Dean.*

Baltimore, March, 1866.

PARRISH'S PHARMACY.—Enlarged Edition.

A TREATISE ON PHARMACY,

DESIGNED AS A TEXT-BOOK FOR THE STUDENT, AND AS A GUIDE FOR THE PHYSICIAN AND PHARMACEUTIST, CONTAINING THE OFFICINAL AND MANY UNOFFICINAL FORMULAS, AND NUMEROUS EXAMPLES OF EXTEMPORANEOUS PRESCRIPTIONS.

BY EDWARD PARRISH,

Graduate in Pharmacy, Professor of Materia Medica in the Philadelphia College of Pharmacy, &c.

Third edition, thoroughly revised and improved, with important additions.

With two hundred and thirty-eight illustrations.

In one large octavo volume, of 850 closely printed pages, strongly done up in extra cloth. Price $5 00.

The delay in the appearance of this new edition has been caused by the necessity of incorporating in it the results of the new U. S. Pharmacopœia, together with all other improvements and discoveries in pharmaceutical science. This has been thoroughly accomplished, and the increased size of the volume shows the care with which it has been brought up to the most advanced state of practical knowledge. The work has long been admitted to be indispensable, not only to the pharmaceutist, but to the physician who is compelled to dispense his own prescriptions, and the very great favor with which it has been received has enabled the author, in successive revisions, to adapt it completely to the objects proposed, and to condense in its ample pages a vast amount of practical information, not elsewhere, perhaps, accessible, especially with regard to our native vegetable remedies. The plan of the volume may be gathered from the following

SUMMARY OF THE CONTENTS.

PART I.—PRELIMINARY.

CHAP. I. Furniture and Implements necessary to the Dispensing Office or Shop.
II. The United States Pharmacopœia.
III. Weights, Measures, and Sp. Gravity.

PART II.—GALENICAL PHARMACY.

CHAP. I. The different parts of Plants, their Collection and Desiccation.
II. On the Powdering of Drugs, and on Powders.
III. On Solution and Filtration.
IV. The Medicated Waters.
V. Maceration and the Infusions.
VI. Percolation, or the Displacement Process.
VII. Tinctures.
VIII. Medicated Wines, Vinegars, Elixirs, and Cordials.
IX. Preparations of Opium.
X. The Generation of Heat for Pharmaceutical purposes.
XI. Measuring and Regulating Heat, and on the Decoctions.
XII. Evaporation and the Extracts.
XIII. Fluid Extracts and Oleoresins.
XIV. Syrups and Honeys.
XV. Conserves, Confections, Electuaries, Pastes, Lozenges, and Candies.
XVI. Extracta Resina and "Concentrated Remedies."
XVII. Distillation, Distilled Products, and Perfumery.

PART III. INORGANIC PHARMACEUTICAL CHEMISTRY.

CHAP. I. On Chemical Processes.
II. The Non-metallic Elements and their Medicinal Preparations.
III. The Inorganic Acids.
IV. The Alkalies and their Salts.
CHAP. V. The Earths and their Preparations.
VI. Iron and Manganese.
VII. Preparations of Copper, Zinc, Nickel, and Cadmium.
VIII. Lead, Silver, Bismuth.
IX. Antimony, Arsenic.
X. Mercury, Gold, Platinum.

PART IV.—PHARMACY IN ITS RELATION TO ORGANIC CHEMISTRY.

CHAP. I. Ligneous Fibre and its Derivatives.
II. Farinaceous, Mucilaginous, and Saccharine Principles.
III. Albuminous, and similar Principles, and certain Animal Products.
IV. Fermentation, Alcohol, and Ethers.
V. Fixed Oils and Fats.
VI. Volatile Oils, Camphors, and Resins.
VII. Organic Acids.
VIII. Organic Alkalies, or Alkaloids.
IX. Neutral Organic Principles.

PART V. EXTEMPORANEOUS PHARMACY.

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III. On Powders, Pills, Suppositories, &c.
IV. Liquid Preparations, Solutions, Mixtures, &c.
V. Styptic and Depilatory Powders, Lotions, Collyriæ, Injections, Enemas, Gargles, Baths, Inhalations, and Fumigations.
VI. Cerates, Ointments, and Liniments.
VII. Plasters, Plasmata, and Cataplasms.
VIII. On Dispensing and Compounding Prescriptions.

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On the Management of the Sick Chamber—Preparations of Articles of Diet—Recipes for Important Popular Medicines.

The thoroughness with which this very complete plan has been filled out may be judged from the fact that the Index contains about 4,700 items. Under the head of Acids there are 312 references; under Emplastrum, 36; Extracts, 159; Lozenges, 25; Mixtures, 55; Pills, 56; Syrups, 131; Tinctures, 138; Unguentum, 57, &c. &c. It thus becomes a storehouse of pharmaceutical knowledge, to which the physician can at all times refer with the certainty of finding the latest practical information on all subjects coming within its scope.

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This system of physiology, both from the excellence of the arrangement studiously observed throughout every page, and the clear, lucid, and instructive manner in which each subject is treated, promises to form one of the most generally received class-books in the English language. It is, in fact, a most admirable epitome of all the really important discoveries that have always been received as incontestable truths, as well as of those which have been recently added to our stock of knowledge on this subject. We will, however, proceed to give a few extracts from the book itself, as a specimen of its style and composition, and this, we conceive, will be quite sufficient to awaken a general interest in a work which is immeasurably superior in its details to the majority of those of the same class to which it belongs. In its purity of style and elegance of composition it may safely take its place with the very best of our English classics; while in accuracy of description it is impossible that it could be surpassed. In every line is beautifully shadowed forth the emanations of the polished scholar, whose reflections are clothed in a garb as interesting as they are impressive, with the one predominant feeling appearing to pervade the whole—an anxious desire to please and at the same time to instruct.—*Dublin Quarterly Journal of Med. Sciences.*

The work before us, however, in our humble judgment, is precisely what it purports to be, and will answer admirably the purpose for which it is intended. It is *par excellence* a text-book, and the best text-book in this department that we have ever seen. We have carefully read the book, and speak of its merits from a more than a cursory perusal. Looking back upon the work we have just finished, we must say a word concerning the excellence of its illustrations. No department is so dependent upon good illustrations, and those which keep pace with our knowledge of the subject, as that of physiology. The wood-cuts in the work before us are the best we have ever seen, and, being original, serve to illustrate precisely what is desired.—*Buffalo Med. Journal.*

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The "Library Department" of the "MEDICAL NEWS" for 1866 will be occupied with the completion of Dr. C. Handfield Jones' "CLINICAL OBSERVATIONS ON FUNCTIONAL NERVOUS DISORDERS," which has attracted so much commendation during 1865. The portions of the work which have appeared previous to the time of subscribing can be procured.

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To accomplish this, communications are invited from gentlemen in all parts of the country. All elaborate articles inserted by the Editor are paid for by the Publisher. For many years, the list of contributors has embraced the leading names of the profession in every part of the United States, and it is hoped that the "ORIGINAL DEPARTMENT" of the "JOURNAL" will continue, as heretofore, to represent, both in its variety and practical character, the highest development of scientific medicine in America.

As the aim of the "JOURNAL" is to combine the advantages of all the different kinds of periodicals, its "REVIEW DEPARTMENT" will be found an important feature. Extended and impartial reviews of all important new works are given, together with very numerous bibliographical notices, including nearly all the medical publications of this country and Great Britain, together with the more important continental works. The reader is thus kept thoroughly informed as to the progress and direction of medical literature.

This is followed by the "QUARTERLY SUMMARY OF THE IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES," which presents in a condensed form an abridgment of all facts and investigations of interest which have been made public during the preceding quarter at home and abroad. It is the object of especial care on the part of the Editor, and the ample materials at his command enable him to render it exceedingly complete. It is classified and arranged under appropriate heads, thus facilitating the researches of the reader in pursuit of particular subjects.

The extent and variety of the matter thus laid before subscribers may perhaps best be shown by a very condensed summary of the contents of the last two numbers of the "JOURNAL."

SUMMARY OF CONTENTS OF No. 101, NEW SERIES, FOR JANUARY, 1866.

MEMOIRS AND CASES.

I. Researches on Typhus Fever. By J. M. Da Costa, M. D., of Philadelphia.
II. On the Cause of Intermittent and Remittent Fevers, traced to certain species of Palmellæ. By J. H. Salisbury, M. D., of Cleveland, Ohio.
III. On the Causes of Certain Diseases on Ships of War. By Edgar Holden, M. D., of Newark, N. J.
IV. Comparative advantages of Pirogoff's, Syme's, and Chopart's Amputations, and Excision of the Ankle-Joint, by Hancock's Method, with the proposition of another Method for Excision. By James M. Holloway, M. D., of Louisville, Ky.
V. On Symptomatic Bronchial Irritation. By A. P. Merrill, M. D., of New York City.
VI. On Puerperal Tetanus. By Wm. A. Gordon, M. D., New Bedford, Mass.
VII. The Use of the Artificial Membrana Tympani. By D. B. St. John Roosa, M. D., of New York.
VIII. Successful Removal of the Uterus and both Ovaries by Abdominal Section. By Horatio R. Storer, M. D., of Boston.
IX. Cases of Excision of Bones. By James B. Cutter, M. D., of Newark, N. J. (With two wood-cuts.)
X. Amputation of Right Shoulder-Joint. By W. P. Moon, M. D., Chestnut Hill, Pa. (With a wood-cut.)
XI. A Peculiar Case of Hæmatocele. By Charles M. Allin, M. D., of New York.
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XIV. Summary of the Transactions of the College of Physicians of Philadelphia.
Mammary Cancer. By John Ashhurst, Jr., M. D.—Report on Meteorology and Epidemics for the year ending January 1st, 1865. By James M. Corse, M. D.—Cancer of the Ascending Colon. By Alfred Stillé, M. D.—Regeneration of Bone. By William Hunt, M. D.—Tumor on the Posterior Portion of the Tongue. By Wm. Hunt, M. D.—Fatal Peritonitis in Typhoid Fever, without Perforation of the Bowel. By Alfred Stillé, M. D.

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XV. Clinique Médicale de l'Hôtel-Dieu de Paris. Par A. Trousseau. Deuxième édition, revue et augmentée.
XVI. Lectures on the Pathology and Treatment of Lateral and other Forms of Curvature of the Spine. By William Adams, F. R. C. S.

BIBLIOGRAPHICAL NOTICES.

XVII. Transactions of the Medical Society of the State of Pennsylvania, at its Sixteenth Annual Session, held at Altoona, June, 1865.
XVIII. Reports of American Hospitals for the Insane.
XIX. The Practice of Medicine and Surgery applied to the Diseases and Accidents incident to Women. By Wm. H. Byford, A. M., M. D.
XX. Materia Medica for the Use of Students. By John B. Biddle, M. D.
XXI. On the Direct Influence of Medicinal and Morbific Agents upon the Muscular tissue of the Blood-vessels. By R. Cresson Stiles, M. D., etc.
XXII. Obscure Diseases of the Brain and Mind. By Forbes Winslow, M. D., D. C. L.
XXIII. An Inquiry into the Possibility of Restoring the Life of Warm-Blooded Animals in certain cases. By Benjamin Ward Richardson, M. A., M. D.
XXIV. The Practice of Medicine. By Thomas Hawkes Tanner, M. D., F. L. S.
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XXVI. The Essentials of Materia Medica and Therapeutics. By Alfred Baring Garrod, M. D., F. R. S.
XXVII. Lectures on the Diseases of the Stomach. By William Brinton, M. D., F. R. S.
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XXIX. Lectures on Epilepsy, Pain, Paralysis, &c. By Charles Bland Radcliffe, M. D.
XXX. Patologia e Terapia delle Malattie Veneree di F. J. Bumstead.—Bumstead's Pathology and Treatment of Venereal Diseases. Translated into the Italian by Dr. Cirillo Tamburini.

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3. Deglutition as observed by Autolaryngoscopy. By M. Guinier.
4. Influence of Galvanism on the Heart. By Dr Flies.
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9. Modification in Canquoin's Caustic Paste.
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20. Use of Phenic Acid for the Cure of Phthisis. By Dr. Wolff.
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22. Bronzing of the skin for Seven Years—Disease of Supra-renal Capsules.
23. Climacteric Insanity in the Male. By Dr. Skae.

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24. Osteo-myelitis. By Dr. Fayrer.
25. Treatment of Hereditary Syphilis without Mercury. By Mr. Dunn.
26. Traumatic Tetanus successfully treated by Opium Smoking, Chloroform, and Hemp. By Dr. Fayrer.
27. Subcutaneous Section of Carbuncle. By Mr. Heath.
28. Enlarged Spleen Removed by Excision. By Mr. Wells.
29. Entire Tongue Successfully Removed. By Mr. Nunneley.
30. Congenital Luxation of the Patella. By Mr. William Stokes.
31. Compound Dislocation of the Astragalus—Reduction. By Dr. Grant.
32. Fissured Fracture of the External Table of the Skull. By Mr. Teevan.
33. Fracture of the Larynx; Tracheotomy; Recovery. By Dr. Maclean.

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43. Extra-Uterine Fœtation. By Dr. Hicks.
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48. Does a Diet of Animal Food Conduce to Leanness? By Dr. Davy.
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Paralysis of the Median Nerve. By J. W. Moorman, M.D.
Sycosis cured by Sulphite of Soda. By J. Y. Dale, M.D.

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SUMMARY OF CONTENTS OF No. 102, NEW SERIES, FOR APRIL, 1866.

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I. Microscopic Researches on the Histology and Minute Anatomy of the Spleen and Lacteal and Lymphatic Glands. By J. H. Salisbury, M.D., Cleveland, Ohio. (With a plate.)
II. Reflections upon the Epidemic of Yellow Fever at Pensacola in 1863. By B. F. Gibbs, M.D., U.S.N.
III. Hospital Gangrene at Patterson Park Hospital, Balt. By W. Kempster, M.D., of Syracuse, N.Y.
IV. On Ether as a Local Application. By J. J. Black, M.D., of Philadelphia.
V. On Chloroform and Ergot in Obstetric Practice. By Charles C. Hildreth, M.D., of Zanesville, Ohio.
VI. On some of the Diseases prevailing among the Freedpeople in the Dist. of Col. By Robert Reyburn, M.D., Washington, D.C.
VII. On Torpedo Wounds. By S. W. Gross, M.D., of Philadelphia.
VIII. Case of Neuralgic and Paralytic Affection following Labor. By Isaac G. Porter, M.D., New London, Conn.
IX. On Fractures of the Larynx and Ruptures of the Trachea. By Wm Hunt, M.D., of Philadelphia.
X. Report of Eight Cases of Lithotomy. By Paul F. Eve, M.D., of Nashville, Tenn.
XI. On Hypersulphite of Soda in Intermittent Fever. By T. D. Leavitt, M.D., of Germantown, Pa.
XII. On the Treatment of Certain Chronic and Acute Affections of the Skin by Chloride of Iron. By Bedford Brown, M.D., of Washington City, D.C.
XIII. Shoulder Presentation in Four Successive Labors. By Charles C. Hildreth, M.D., of Zanesville, O.
XIV. Case of Ovariotomy. By James E. Reeves, M.D., Fairmont, W. Va.
XV. Reduction of an Inverted Uterus of Eight Months' Duration. By Thomas Addis Emmett, M.D., New York.

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XVI. Summary of the Proceedings of the Pathological Society of Philadelphia.
Remittent Fever; Pigment in all Tissues of Body. By Wm. Pepper, M.D.—Acute Infiltrated Tubercle Associated with Malaria. By Wm. Pepper, M.D.—Remittent Fever; Pigment in the Brain, &c. By Wm. Pepper, M.D.—Tubercular Meningitis. By T. H. Andrews, M.D.—Spina Bifida; Fatty Kidney. By Dr. Packard.—Fracture of Base of Skull. By Dr. Wm. Pepper.—Fracture of Right Temporal Bone. By Dr. Wm. Pepper.—Gunshot Wound through Thyroid Gland. By Wm. Pepper, M.D.—Medullary Cancer. By S. W. Mitchell, M.D.—Examination of Tumour. By Wm. Pepper, M.D.—Lithotomy. By John Ashhurst, Jr., M.D.—Polypi of the Vocal Chords. By S. W. Mitchell, M.D.—Suppurative Meningitis following Comminuted Fracture of the Nasal Bones. By Wm. Pepper, M.D.—Abscess of the Spleen. By George Pepper, M.D.

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XVIII. Stimulants and Narcotics. By Francis E. Anstie, M.D., M.R.P.C.
XIX. Laryngoscopy.

BIBLIOGRAPHICAL NOTICES.

XX. Transactions of American State Medical Societies.
XXI. Reports of American Hospitals for the Insane.
XXII. Guy's Hospital Reports.
XXIII. On the Arrangement of the Muscular Fibres in the Ventricles of the Vertebrate Heart. By James Bell Pettigrew, M.D.
On the Relation, Structure, and Function of the Valves of the Vascular System in Vertebrata. By James Bell Pettigrew, M.D.
XXIV. Essay on the Use of the Nitrate of Silver in the Treatment of Inflammation, Wounds, and Ulcers. By John Higginbottom, F.R.S.
XXV. Contributions to Bone and Nerve Surgery. By J. C. Nott, M.D.

XXVI. On Wakefulness. By Wm. A. Hammond, M.D.
XXVII. Annual Report of the Surgeon-General U.S.A. 1865.
XXVIII. The Student's Book of Cutaneous Medicine. By Erasmus Wilson, F.R.S.
XXIX. On the Diseases, Injuries, and Malformations of the Rectum and Anus. By T. J. Ashton.
XXX. Lectures on the Diseases of Infancy and Childhood. By Charles West, M.D.

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1. The Functions of the Nucleus. By M. Balbiani.
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